

**TRIP REPORT
FOR THE
WASHINGTON COMPRESSED STEEL SITE
PHILADELPHIA, PHILADELPHIA COUNTY, PENNSYLVANIA**

Prepared for

U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103

Prepared by

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EPA Contract No. 68-S3-00-02

Technical Direction Document No. SE3-02-10-004
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Prepared by

Approved by

(b) (4)

Project Manager

START Program Manager

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1.0 INTRODUCTION

Under Eastern Area Superfund Technical Assessment and Response Team (START) Contract No. 68-S3-00-02, Technical Direction Document (TDD) No. SE3-02-10-004, U.S.

Environmental Protection Agency (EPA) Region 3 On-Scene Coordinator (OSC) Greg Ham tasked Tetra Tech EM Inc. (Tetra Tech) to conduct a removal site assessment at the Washington Compressed Steel (WCS) site to determine whether the site posed an immediate or potential threat to human health or the environment. The WCS site is an active scrap yard and recycling facility located in Philadelphia, Philadelphia County, Pennsylvania. During the assessment, Tetra Tech collected 10 surface soil samples from inside and around the facility, including one quality assurance and quality control (QA/QC) sample. The data collected from this assessment will be used to determine whether a removal action or any other action is necessary.

This trip report provides site background information in Section 2.0; describes site activities, sample handling, sample analytical results, and investigation-derived waste disposal in Sections 3.0, 4.0, 5.0, and 6.0 respectively; and summarizes future actions in Section 7.0. All references cited in this report are listed after the text.

2.0 BACKGROUND

This section describes site location, site layout, and history and summarizes previous investigation activities.

2.1 SITE LOCATION

The WCS site is located at 271 West Berks Street in Philadelphia, Pennsylvania, as shown in Figure 1, Site Location Map (U. S. Geological Survey [USGS] 1967, 1967). The geographic coordinates of the site are 39.98019° north latitude and 75.13938° west longitude. The site is bordered by West Norris Street to the north, American Street to the east, Berks Street to the south, and 3rd Street to the west (Tetra Tech 2002).

2.2 SITE DESCRIPTION

The WCS site is an active scrap yard located on the northwest corner of American and Berks Streets. The site covers one city block (3.174 acres) and is situated in a mixed industrial, commercial, and residential area along the American Street Industrial Corridor of Philadelphia. The area surrounding the site is developed and is comprised mainly of commercial and industrial properties. On the western side of the property along 3rd Street, there are several occupied and abandoned row homes and a park used by local residents. There are two buildings, a crusher unit, and a shearer unit located on the property. One building located on the site is the former scale building and the other building is used as the office for the scrap yard. The crusher and shearer units are used by the scrap yard to recycle and process the metal. The rest of the site is covered with scrap metal waiting to be recycled and processed for shipment (Tetra Tech 2002). Figure 2, Site Layout Map, shows the features of the scrap yard.

A fence secures the property, and the facility uses security guards at night. All truck traffic access to the scrap yard is controlled. All incoming trucks are weighed, and the facility screens the incoming trucks for radioactive materials using a radiation detection system (Tetra Tech 2002).

2.3 SITE HISTORY

The WCS Company property has been in operation at the site for approximately 70 years and is currently being used as a metal scrap yard. The WCS Company owns the property and Morris Iron and Steel Co., Inc., operates the scrap yard. Morris Iron and Steel Co., Inc., has leased the property from WCS Company for the past 6 years. Morris Iron and Steel Co., Inc., continues to recycle and process metal. All of the processed metal is shipped to other facilities to be converted to steel. The scrap yard processes 1,200 tons of ferrous metal per month. There are 11 employees working at the scrap yard (Tetra Tech 2002).



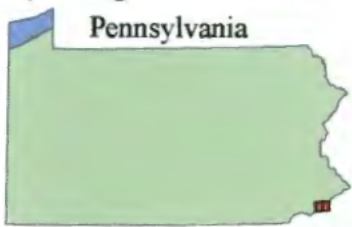
Source: Modified from USGS 7.5-Minute Series Topographic Quadrangle, Camden, New Jersey-Pennsylvania, 1967, Revised 1994

Philadelphia, Pennsylvania-New Jersey, 1967, Revised 1994

0 0.25 0.5 Miles

Quadrangle Location = ■

Pennsylvania



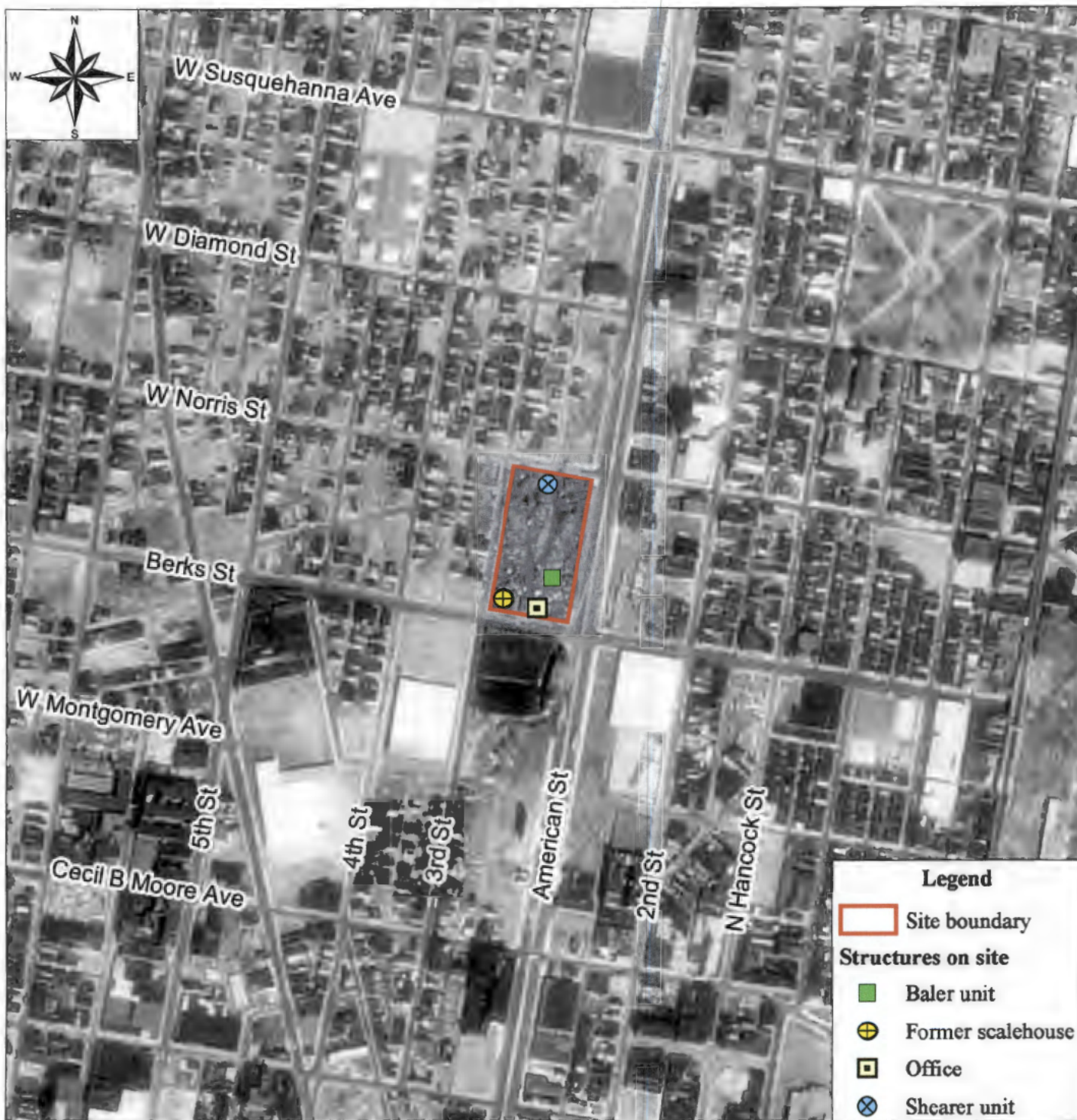
Washington Compressed Steel Site Philadelphia, Pennsylvania

Figure 1
Site Location Map

TDD No. SE3-02-10-004
EPA Contract No. 68-S3-00-02



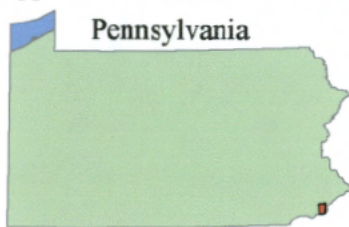
Tetra Tech EM Inc.



Source: Modified from USGS Digital Orthophoto (DOQQ) MrSID
Mosaic for Philadelphia, Pennsylvania Quadrangle (NAPP II, 1993-1995)

0 250 500
Feet

Approximate Site Location = 



Washington Compressed Steel Site Philadelphia, Pennsylvania

Figure 2
Site Layout Map

TDD No. SE3-02-10-004
EPA Contract No. 68-S3-00-02



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2.4 PREVIOUS INVESTIGATION ACTIVITIES

On September 21, 2001, the City of Philadelphia Solicitor sent a letter to EPA Region 3 requesting that they assess this site to determine what contamination exists on the site. The city reported the appearance of oil-stained soil on the property and outside of the property. The city is concerned that this oil comes from the crusher unit and is a potential source of significant contamination (Tetra Tech 2002).

On October 28, 2002, OSC Ham and Tetra Tech project manager Joseph Piccolo met with two officials from the scrap yard operator (Morris Iron and Steel Co., Inc.) and conducted a site reconnaissance. OSC Ham explained the purpose of the site reconnaissance to the scrap yard operator. During the site reconnaissance, the officials from Morris Iron and Steel Co., Inc., informed OSC Ham that Morris Iron and Steel Co., Inc., leases the property from WCS and is planning to relocate in about 1 year (Tetra Tech 2002).

During the site reconnaissance, Tetra Tech performed a radiation survey using a micro R instrument. The readings ranged from 10 to 12 micro Roentgen (μR) inside the scrap yard and 5 to 8 μR outside the scrap yard (Tetra Tech 2002).

During the site reconnaissance, EPA and Tetra Tech observed the following:

- No scrap vehicles, batteries, transformers, motors, drums, old appliances, or gas cylinders
- No monitoring wells or sump pumps on the site
- Sparse vegetation on site
- Some oil-stained soil by the crusher and shearer units
- Large piles of scrap metal throughout the property
- Fill material and gravel covering most of the site
- Several concrete pads located along the fence line

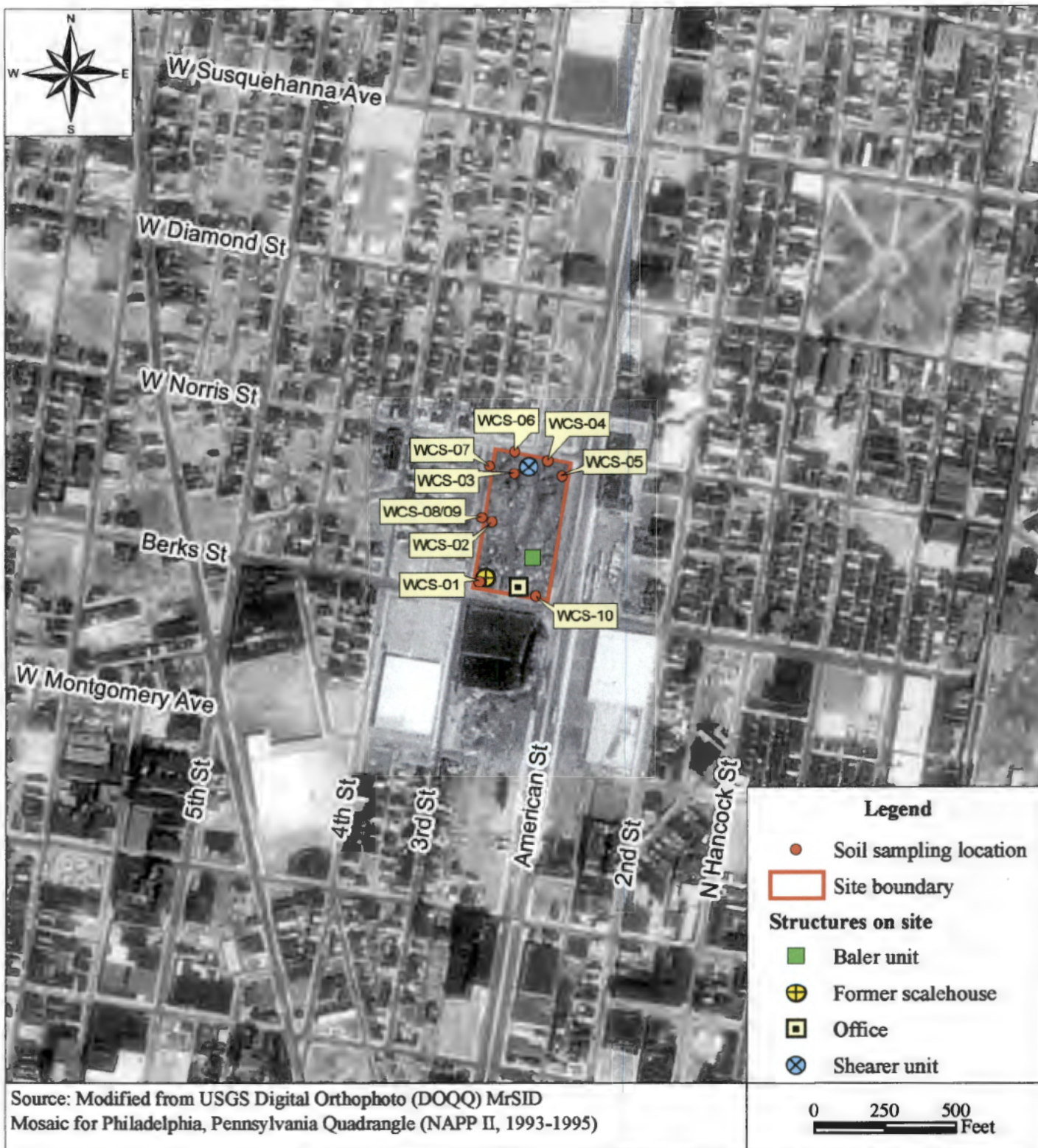
During the week of November 17, 2002, OSC Ham had secured site access for the soil sampling of the scrap yard. The soil sampling event was scheduled for November 21, 2002 (Tetra Tech 2002).

3.0 SITE ACTIVITIES

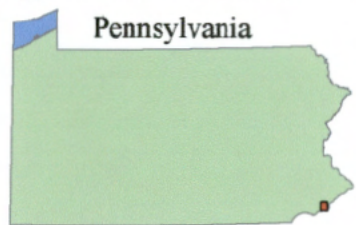
On November 21, 2002, Tetra Tech START sampling team personnel (b) (4) and (b) (4) were on site to collect soil samples from the WCS site. The Tetra Tech sampling team met with Morris Iron and Steel Co., Inc., and initiated the soil sampling of the property. Representatives from Morris Iron and Steel Co., Inc., were originally going to split the soil samples with Tetra Tech but reconsidered their decision and did not split the soil samples collected during the removal site assessment. Tetra Tech collected a total of 10 soil samples, including one field duplicate sample. Each soil sample was homogenized in a dedicated, disposable, aluminum tray using a dedicated, disposable, plastic spatula. All rocks and extraneous matter were removed from the samples collected. Samples analyzed for target analyte list (TAL) metals, cyanide, target compound list (TCL) semivolatile organics, pesticides, and polychlorinated biphenyls (PCB) were transferred from the aluminum tray into two 8-ounce, clear wide-mouth glass jars. Samples analyzed for TCL volatile organics were collected using EN Core® samplers (Tetra Tech 2002).

Sampling locations were electronically recorded using a global positioning system (GPS) instrument. Figure 3, Sampling Location Map, shows approximate sampling locations.

Dedicated sampling equipment (a disposable plastic scoop and an aluminum baking pan) and personal protective equipment (nitrile gloves only) were used at each sampling location (Tetra Tech 2002). Sampling activities were recorded in a field logbook in accordance with Tetra Tech



Approximate Site Location = ■



Washington Compressed Steel Site Philadelphia, Pennsylvania

Figure 3
Sampling Location Map

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EPA Contract No. 68-S3-00-02



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Standard Operating Procedures (SOP) 024, "Recording of Notes in Field Logbook" (Tetra Tech 1999); copies of Tetra Tech's field logbook notes are provided in Appendix A. Copies of Tetra Tech's photographic documentation of site activities are included in Appendix B.

Table 1 in Appendix C presents a summary of the soil samples Tetra Tech collected on November 21, 2002. Table 1 summarizes the sample identifiers, collection dates and times, sampling locations, geographic coordinates of each sampling location obtained using the GPS, and QA/QC descriptions. Table 2 in Appendix C shows the actual depths from which the soil samples were collected.

4.0 SAMPLE HANDLING

Soil samples for TAL metals and cyanide analysis were shipped via Federal Express to Liberty Analytical in Cary, North Carolina, on November 21, 2002, under Contract Laboratory Program (CLP) Case No. 31206. Soil samples for TCL organics, pesticides, and PCB analysis were shipped via Federal Express to Ceimic Corporation in Narragansett, Rhode Island, on November 21, 2002, under CLP Case No. 31206.

Nine surface soil samples were analyzed for TCL volatile and semivolatile organics, pesticides, and PCBs using CLP method OLM04.2; one sample (WCS-01) was not analyzed for these parameters by the CLP laboratory because the sample jar was broken during shipment of the samples.) Ten surface soil samples were analyzed for TAL metals and cyanide using CLP method ILM04.1.

Table 3 in Appendix C presents a summary of the analytical parameters, matrices, methods, number of samples submitted for each analytical parameter, sample containers, preservatives, and analytical laboratories used for the WCS site removal assessment.

5.0 ANALYTICAL RESULTS

In Appendix C, Tables 4 and 5 summarize the inorganic and organic analytical results, respectively. Inorganic and Organic Data Validation Reports from the laboratories are included as Attachments A and B to this document, respectively. When applicable, Tables 4 and 5 include EPA's risk-based concentrations (RBC) and emergency removal guidelines (ERG). The ERGs and RBCs used in this report are from EPA's industrial soil lists. No organic compounds (including TCL volatile and semivolatile organics, pesticides, and PCBs), TAL metals, or cyanide exceeded any ERGs on the industrial soil lists. None of the 10 soil samples collected during the WCS removal assessment were above any RBCs for TCL volatile organics. Although additional organic compounds (including TCL volatile organics, TCL semivolatile organics, pesticides, and PCBs), TAL metals and cyanide were detected in soil samples, the analytical results summarized in this section were the only compounds detected at concentrations above their corresponding industrial soil ERG and RBCs.

Arsenic concentrations were detected in all surface soil samples above the RBC (3.8 milligrams per kilogram [mg/kg]) and ranged from 8.1 to 103 mg/kg. Soil samples WCS-02 (1,330 mg/kg) and WCS-10 (90.7 mg/kg) contained antimony above the RBC (82 mg/kg). Sample WCS-10 contained nickel (6,620 mg/kg) and chromium (8,070 mg/kg) above the RBCs; the RBC for nickel is 4,100 mg/kg and for chromium is 610 mg/kg.

All of the surface soil samples (WCS-01 through WCS-10) revealed lead concentrations ranging from 798 to 65,000 mg/kg. Although no RBC or ERG has been determined for lead in surface soils at industrial or residential sites, EPA has used 1,000 mg/kg lead as the removal action level for industrial sites at other EPA removal sites.

All of the surface soil samples collected (WCS-01 through WCS-10) revealed benzo(a)pyrene concentrations ranging from 1,600 to 12,000 micrograms per kilogram ($\mu\text{g/kg}$). The RBC for benzo(a)pyrene is 780 $\mu\text{g/kg}$. Soil samples WCS-02 (7,900 $\mu\text{g/kg}$) and WCS-04 (15,000 $\mu\text{g/kg}$) contained benzo(b)fluoranthene above the RBC (7,800 $\mu\text{g/kg}$). Sample WCS-04 contained indeno(1,2,3,-cd) pyrene (12,000 $\mu\text{g/kg}$) above the RBC (7,800 $\mu\text{g/kg}$).

Four of the 10 surface soil samples collected (WCS-02, WCS-03, WCS-04, and WCS-10) revealed aldrin concentrations ranging from 610 to 1,300 $\mu\text{g/kg}$. The RBC for aldrin is 340 $\mu\text{g/kg}$. Sample WCS-02 contained 4,4'DDD (49,000 $\mu\text{g/kg}$) above the RBC (24,000 $\mu\text{g/kg}$).

Five of the 10 surface soil sample surface soil samples collected (WCS-02, WCS-03, WCS-04, WCS-05, and WCS-10) revealed Aroclor-1248 concentrations ranging from 5,500 J to 33,000 J $\mu\text{g/kg}$. The RBC for Aroclor-1248 is 2,900 $\mu\text{g/kg}$. Five of the 10 surface soil samples collected (WCS-03, WCS-04, WCS-05, WCS-06, and WCS-10) revealed Aroclor-1254 concentrations ranging from 3,200 to 27,000 $\mu\text{g/kg}$. The RBC for Aroclor-1254 is 2,900 $\mu\text{g/kg}$.

6.0 INVESTIGATION-DERIVED WASTE DISPOSAL

All solid waste generated on site during the removal assessment was disposed of as nonhazardous, municipal waste.

7.0 FUTURE ACTIONS

The EPA OSC will evaluate the analytical results and use the data to determine whether any future actions are necessary.

REFERENCES

- Tetra Tech EMI Inc. (Tetra Tech). 1999. "Recording of Notes in Field Logbook." Tetra Tech Standard Operating Procedures (SOP) 024. November.
- Tetra Tech. 2002. Field Logbook Notes Taken During the Removal Site Assessment at the Washington Compressed Steel Site. Prepared by Joseph Piccolo, Environmental Scientist. November.
- U.S. Geological Survey (USGS). 1967, Revised 1994. 7.5-Minute Series Topographic Map of Camden, New Jersey-Pennsylvania, Quadrangle.
- USGS. 1967, Revised 1994. 7.5-Minute Series Topographic Map of Philadelphia, Pennsylvania-New Jersey, Quadrangle.
- USGS. Digital Orthophoto NAPP II, 993-1995.
- U.S. Environmental Protection Agency (EPA). 2002. "EPA Region 3 Risk-Based Concentration (RBC) Table." October.

APPENDIX A

FIELD LOGBOOK NOTES

(13 Pages)

Project / Client

15 OCT 2002 (TUESDAY)
CALLED OSC GNER HAM
ABOUT WASHINGTON
COMPRESSED STEEL
SE 3-02-10-004
SITE IS IN PHILADELPHIA
NOT A LOT OF INFO.
SET RECON DATE AND
SAMPLING DATE
CITY OF PHILADELPHIA
WANTS EPA TO CHECK OUT
THE FACILITY
ACTIVE SCRAP YARD.

OSC HAM WANTS 10-12
SOIL SAMPLES COLLECTED
(ON SITE AND OFF SITE) ~~AND~~
WILL USE CLP FOR LAB
ANALYSIS
WILL ANALYZE FOR PCB/PCBT
TAL METALS, TCL ORGANICS
AND SUOC

TASKED TO CONDUCT RFA

Project / Client

STANDARD REMOVAL
ASSESSMENT AT SCRAP
YARD.

NO SEDIMENT / DRUM
SAMPLES OR WATER SAMPLES
WILL BE COLLECTED.

ON SEPT 21, 2001 THE
CITY OF PHILADELPHIA
SENT A LETTER (FROM
CITY SOLICITOR -
KARENETH E. TRYJILLO)
TO EPA TO INVESTIGATE
WASHINGTON COMPRESSED
STEEL (1900 NORTH
AMERICA STREET 19112

FACILITY IS AN ACTIVE
SCRAP YARD AT THE
NORTH WEST CORNER OF
AMERICAN AND BERTS STREET.

CITY SAID THERE APPEARED
TO BE OLD STRAIN SOIL

ON THE SITE.

22 OCT 2002 (THURSDAY)

CALLD OSC HAM
(215) 519-0882 ABOUT
SITE STATUS.

THE RECONNS SET.

TIME OF RECONNS IS

~~28~~ MONDAY 28 OCT 2002

AT 0930 AM.

WILL MEET PROPERTY

OWNER'S WITH BPA TEAM

FOR SITE RECON.

WILL CONDUCT A RAD

SURVEY THEN.

28 OCTOBER 2002 (MONDAY)

0920 ARRIVED ON SITE

0925 MET OSC HAM.

0929 START RECON. AND OSC

HAM MEET WITH FACILITY
OPERATIONS.

0930 RAD BACKSHOWN N-BAD
OUT SIDE FACILITY

5-8 UR

USE MECH 2 INSTRUMENT

OSC DISCUSSES PURPOSE OF
SITE RECON WITH

MR RONALD W. GRILLER

AND MR MIKE PALLOTTI

THEY TELL OSC HAM THAT

THEY LEASE THE PROPERTY

THE MONISTEON AND

STEEL CO, INC. HAS USED

THE PROPERTY FOR THE

PAST 6 YRS. MR. PALLOTTI

SAID THAT THEY WILL BE

~~OUT~~ OFF THE PROPERTY IN

ABOUT A YR. THEY ARE

GOING TO RELOCATE THE

FACILITY ELSEWHERE.

THE PROPERTY IS OWNED

BY WASHINGTON COMPRESSOR

STEEL. THE PROPERTY HAS

BEEN USED AS A SCRAP

YARD FOR 60-70 YEARS

THE FACILITY SERVES
ALL INCOMING TRUCKS
WITH A RAD DETECTION
SYSTEM BY THE WEIGHT
SCALES.

THERE ARE 11 EMPLOYEES

THEY PROCESS 1,200 TONS
OF FERROUS METAL / MONTH

THEY DO PROCESS VERY LITTLE
NON FERROUS METALS.

NO CANS, BATTERIES, TRANSFORMERS,
GAS CYLINDERS, OR DRUMS
OBSERVED ON SITE.
NO MOTORS ALSO.

FACILITY USES A SHREDDER
AND A BALLER.

ALL PROCESSED METAL IS
SHIPPED OUT.

NO MONITORING WELL ON SITE
NOT HOOKED UP TO CITY
SEWER SYSTEMS

FACILITY IS LOCATED IN
AN INDUSTRIAL / COMMERCIAL
AREA. RESIDENTIAL HOMES
ARE LOCATED NEARBY.

ACTIVE SCRAP YARD NOT
A JUNK YARD.

OWNER IS MR SAM BROWN

EPA WILL CONTACT MR
BROWN FOR ACCESS TO
SAMPLE PROPERTY.

TOOK A FEW PICTURES OF
OPERATIONS.

WEATHER:

OVERCAST, TEMP IN LOW 50'S

FACILITY MAY WANT TO
SPLIT SAMPLES.

SCRAP YARD APPARANS TO BE A
CLEAN, ORGANIZED FACILITY

SOME OLD STAIRS BY
BATHEN AND SAEANBA.

SURFACE WATER RUNOFF GOES
TO STREET AND INTO SEWER
SYSTEM.

FACILITY IS SECURED WITH
FENCE AND A SECURITY
GUARD AT NIGHT.
ACCESS IS CONTROLLED

LITTLE VEGETATION ON PLOTS

GRAVEL/MUD COVERS MOST OF
FACILITY AREA.

SEVERAL CONCRETE PADS

ARE LOCATED ~~ALONG~~
ALONG THE FENCE LINE.

WILL SAMPLE ALONG THE
FENCE LINE ON PROPERTY
AND OUTSIDE ^{THE} FENCE LINE.
THE SAMPLE ~~LOCATIONS~~ WILL BE
WELL COLLECTED.

NO SUMP PUMPS ON SITE.
0950 END SITE RECON
0955 OSC HAM AND STANT
PICCOLO WALK AROUND
THE OUTSIDE OF FACILITY.
MR GUELLER AND PALLOTTE
ALSO WALK AROUND SITE WITH
OSC HAM AND STANT PICCOLO.

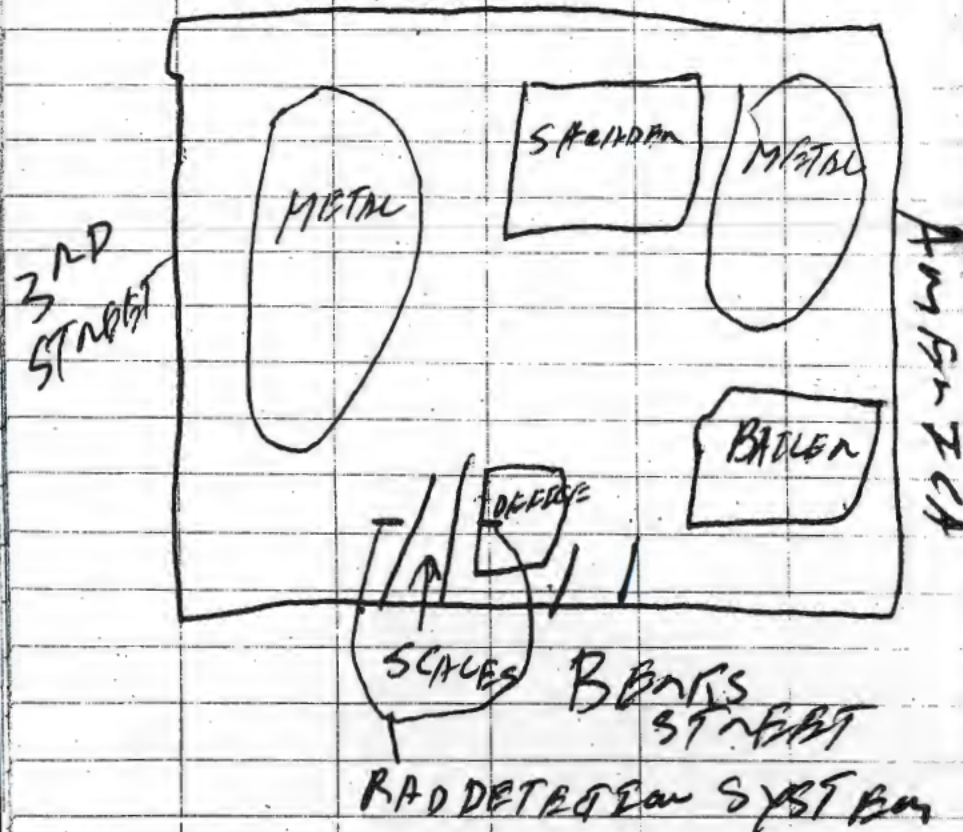
NOTE: RAD READINGS
INSIDE FACILITY
10-12 UR
OUTSIDE - 5-8 UR
FACILITY PERIMETER

MAROR

1008 END OUTSIDE
FACILITY RECON
10/6 OFF SITE.

OSC TEAM WILL GET
BACK TO START PROJECT
IF SAMPLING WILL BE
CONDUCTED ON WEDNESDAY
30 OCT 2002.

MONIES ST



ASB # 31115

CASE # CT1533 CT1534

WASHINGTON COMPRESSED
STEEL

RSCC REGION 3

BETTY ANN JEFFERY

STEP WT - 10/28/02

MULTI ORGANICS
OLM04.2

15 SAMPLE - SOIL
14 DAY Turnaround Time
VOA/BNA/PEST/PCB
CEIMEC CORP (CEIMEC)
10 DEAN KNAUSS DRIVE
NARRAGANSETT, RI
(401) 782-8900 02882
ATTN: GAREN WILLIAMSEN

MULTI INORGANICS
ILM 04.1

15 SAMPLES - SOIL
TM / CN

TURN AROUND TIME
14 DAYS

(b) (4)

NOV 11, 2002 MONDAY
DUE TO LACK OF ACCESS
CLP LAB TO BE RESUBMITTED
SAMPLING SCHEDULED FOR
21 NOV 2002

NOVEMBER 21, 2002
(THURSDAY)

0900 LEAVE OFFICE HEAD
TO WASHINGTON

COMPRESSED STEEL IN
PHILADELPHIA, PA.

0926 ARRIVE ON SITE

WEATHER - OVERCAST / RAIN
TEMP - 50'S

0930 MEET WITH OFFICIALS
FROM WASHINGTON COMPRESSED
STEEL

ON SITE TO SAMPLE:

(b) (4)

TIME

WASHINGTON COMPRESSED STEEL
RON GELMAN

MARIA PALLOTTI

DEE ~~DO~~ WANT TO SPLIT
SAMPLES ~~AND~~ ^{AND} WELL OBSERVE
SAMPLING AND WHERE SAMPLES
WERE COLLECTED.

ITEMI DISCUSSES SAMPLING

MOUTH REPS

10956 START TO COLLECT
WCS 01

15 DIG HOLE 4.5" DEEP.

COLLECT SOIL SAMPLES

2 - 8-WIDE MOUTH GLASS JARS

3 - ENCORE SAMPLES

SAMPLED FOR TAL METALS
AND CW

LT AND SAMPLED FOR SEMI-UDA
S VOA, AND BEST/PCB'S

TRIED TO GET SOIL NOT FILL
A LOT OF GRAVEL AND FILL AROUND
FACILITY.

1ST SAMPLE COLLECTED FROM BX
NO A BUILDING, LOCATED ON THE
D WESTERN CORNER OF PROPERTY
(OLD SCALE BUILDING)

COLLECTED MS/MSD SAMPLES
HORN.

1015 SAMPLE WCS01 COLLECTED
PROCHANGED MEND DOES NOT
WANT TO SPLIT SAMPLES
MORE PALOTTI WILL

ITEM I

STAY WITH SAMPLE TEAM
TO OBSERVE SAMPLING AND
SAMPLE LOCATIONS.

MR GIELEN DEPARTS.

1023 MOVE TO NEXT SAMPLE
LOCATION.

1026 START TO DIG HOLE FOR
SAMPLE WCS02.

SAMPLE LOCATION MIDDLE
OF PROPERTY ON WEST SIDE
(3RD STREET)

1033 DIG HOLE 4.5" DEEP
COLLECT SOIL SAMPLE

WCS-02

SAMPLE COLLECTED NEAR
PUMP LINE ON WESTERN
SIDE OF FACILITY ALONG
3RD STREET.

CPB POSITION IN
COLLECT SAME NUMBER OF
SAMPLES AS WCS01
ANALYZED FOR SAME
PARAMETERS. (TAL, TCL)

M 1648 START TO COLLECT
 WCS-03
 1055 COLLECT WSC-03
 1055 DIG HOLE 4 INCHES DEEP
 H03 FILL SAME AMOUNT OF
 SAND AS WCS-01
 T ANALYZED FOR TAL METALS
 AND CN⁻, TCL ORGANICS
 PCB/PEST.
 LT 1103 START TO COLLECT
 WSC-04
 DIG HOLE 5 INCHES DEEP
 METAL AND FILL MATERIAL
 ALL OVER DIFFICULT TO
 GO DEEPER.
 NO ALL SAMPLES ARE
 SURFACE SAMPLES
 1-6 INCHES DEEP.
 1108 SAMPLE WSC-04
 1117 DIG HOLE 4.5 INCHES
 DEEP. START TO COLLECT
 WSC-05
 1122 COLLECT SAMPLE
 WSC-05

1133 START TO COLLECT
 WSC-06
 SAMPLE COLLECTED OUTSIDE
 SCRAP YARD ON MONNES ST
 THE NORTHERN SIDE OF
 SCRAP YARD.
 FIND A DIRT AREA TO
 SAMPLE. ALMOST ALL
 CONCRETE NO SOIL.
 DIG HOLE 4 INCHES DEEP
 1135 COLLECT SAMPLE
 WSC-06. COLLECT
 1148 START TO ~~SAMPLE~~
 WSC-07
 SAMPLE LOCATED OUTSIDE
 FACILITY ON 3RD ST.
 WEST SIDE OF SCRAP YARD
 1153 DIG HOLE 4.5 INCHES
 DEEP. COLLECT SAMPLE
 WSC-07
 1159 START TO COLLECT
 WSC-08 / WSC-09
 WSC-09 IS A DUP OF
 WSC-08

M USED 1234 AS TIME
COLLECT FOR DUP WCS-09
DIG HOLE ~~10~~ 5.5 INCHES

1" DEEP.

SAMPLE LOCATED ON OTAWA
SIDE OF WCS-02.

T WCS-08/WCS-09 COLLECT OUT
SIDE SCRAP YARD
LOCATED ON 3RD STREET.

1205 SAMPLES COLLECTED

WCS-08 AND DUP

WCS09.

1222 START TO SAMPLE WCS10
SAMPLE LOCATED INSIDE
FACILITY ON EASTERN
SIDE OF SCRAP YARD.

BY CORNER OF BELKS ST
AND AMERICA AVE

1228 DIG HOLE ~~10~~ 4 INCHES
DEEP 4.0

COLLECT SAMPLES

WCS-10.

NO OTHER SAMPLES
COLLECTED

1240 OFF FACILITY

1245 HEAD BACK TO OFFICE

SAMPLES

WCS-01

WCS-02

WCS 63

WCS 04

WCS 05

WCS 10

COLLECTED
ON SITE

WCS06

WCS 07

WCS 08/09

COLLECT
OUTSIDE
SITE

SAMPLE COLLECT OUTSIDE

FACILITY ON NORTH

AND 3RD STREETS ONLY

NO AREAS TO COLLECT SAMPLES

ALONG BELKS ON AMERICA

OUTSIDE FACILITY.

INSIDE

OUTSIDE

WCS-03 - WCS06, WCS07

WCS-02 - WCS08/WCS09

3.174 ACRES
SITE OF FACILITY

39.98019 N
75.13938 W
SITE LOCATION

~~SAMPLES~~
ALL POSITIONS WERE
GPS TAKEN AND PUT ON A
SAMPLE LOCATION MAP.

Location _____ Date _____

Project / Client _____

Location _____ Date _____

Project / Client _____

MORRIS IRON & STEEL CO., INC.

7345 MILNOR STREET • PHILADELPHIA, PA 19136

RONALD W. GRELLER

(215) 624-6526
FAX (215) 624-8667**MORRIS IRON & STEEL CO., INC.**

7345 MILNOR STREET • PHILADELPHIA, PA 19136

MIKE PALLOTTI

(215) 624-6526
FAX (215) 624-8667
MOBIL (215) 694-7932

APPENDIX B

PHOTOGRAPHIC DOCUMENTATION LOG

(8 Pages)



Photographic Documentation

Client: U.S. Environmental Protection Agency Region 3
Site Name: Washington Compressed Steel Site
Location: Philadelphia, Pennsylvania

Prepared by: Tetra Tech EM Inc.
Photographer: (b) (4)
TDD Number: SE3-02-10-004

Photograph No. 1

Photograph Date: November 21, 2002

Orientation: Southwest



Description: Old scale building located at the front of facility at the intersection of 3rd and Berks Streets; sample WCS-01 was collected along side the scale building inside the scrap yard.

Photograph No. 2

Photograph Date: November 21, 2002

Orientation: Southeast



Description: Front of facility along Berks Street; no areas to collect samples from the outside of the scrap yard



Photographic Documentation

Client: U.S. Environmental Protection Agency Region 3
Site Name: Washington Compressed Steel Site
Location: Philadelphia, Pennsylvania

Prepared by: Tetra Tech EM Inc.
Photographer: (b) (4)
TDD Number: SE3-02-10-004

Photograph No. 3

Photograph Date: November 21, 2002

Orientation: East

Description: Scrap yard along American Street; no areas to collect samples from the outside of the scrap yard



Photograph No. 4

Photograph Date: November 21, 2002

Orientation: North

Description: Washington Compressed Steel Company shearer unit activities inside the fence line of the scrap yard





Photographic Documentation

Client: U.S. Environmental Protection Agency Region 3
Site Name: Washington Compressed Steel Site
Location: Philadelphia, Pennsylvania

Prepared by: Tetra Tech EM Inc.
Photographer: (b) (4)
TDD Number: SE3-02-10-004

Photograph No. 5

Photograph Date: November 21, 2002

Orientation: East

Description: Washington Compressed Steel Company activities inside the fence line of the scrap yard



Photograph No. 6

Photograph Date: November 21, 2002

Orientation: West

Description: Washington Compressed Steel Company activities inside the fence line of the scrap yard





Photographic Documentation

Client: U.S. Environmental Protection Agency Region 3
Site Name: Washington Compressed Steel Site
Location: Philadelphia, Pennsylvania

Prepared by: Tetra Tech EM Inc.
Photographer: (b) (4)
TDD Number: SE3-02-10-004

Photograph No. 7

Photograph Date: November 21, 2002

Orientation: Southwest

Description: Outside the scrap yard
along 3rd Street



Photograph No. 8

Photograph Date: November 21, 2002

Orientation: Northwest

Description: Outside the scrap yard
along 3rd Street





Photographic Documentation

Client: U.S. Environmental Protection Agency Region 3
Site Name: Washington Compressed Steel Site
Location: Philadelphia, Pennsylvania

Prepared by: Tetra Tech EM Inc.
Photographer: (b) (4)
TDD Number: SE3-02-10-004

Photograph No. 9

Photograph Date: November 21, 2002

Orientation: West

Description: Sampling location WCS-
inside the scrap yard



Photograph No. 10

Photograph Date: November 21, 2002

Orientation: East

Description: View of scrap yard inside
the fence line along American Street





Photographic Documentation

Client: U.S. Environmental Protection Agency Region 3
Site Name: Washington Compressed Steel Site
Location: Philadelphia, Pennsylvania

Prepared by: Tetra Tech EM Inc.
Photographer: (b) (4)
TDD Number: SE3-02-10-004

Photograph No. 11

Photograph Date: November 21, 2002

Orientation: North

Description: Sampling location WCS-4 inside the fence line of the site



Photograph No. 12

Photograph Date: November 21, 2002

Orientation: Northeast

Description: Sampling location WCS-10 inside the fence line of the site





Photographic Documentation

Client: U.S. Environmental Protection Agency Region 3
Site Name: Washington Compressed Steel Site
Location: Philadelphia, Pennsylvania

Prepared by: Tetra Tech EM Inc.
Photographer: (b) (4)
TDD Number: SE3-02-10-004

Photograph No. 13

Photograph Date: November 21, 2002

Orientation: South

Description: Scrap yard inside the fence line along Berks Street



Photograph No. 14

Photograph Date: November 21, 2002

Orientation: Northwest

Description: Sampling location WCS-07 outside the fence line along 3rd Street





Photographic Documentation

Client: U.S. Environmental Protection Agency Region 3
Site Name: Washington Compressed Steel Site
Location: Philadelphia, Pennsylvania

Prepared by: Tetra Tech EM Inc.
Photographer: (b) (4)
TDD Number: SE3-02-10-004

Photograph No. 15

Photograph Date: November 21, 2002

Orientation: West

Description: Sampling location WCS-03 inside the fence line of the site



Photograph No. 16

Photograph Date: November 21, 2002

Orientation: Southwest

Description: Sampling location WCS-03 inside the fence line of the site



APPENDIX C

TABLES

(Seven Pages)

<u>Table</u>		<u>Page</u>
1	Sample Summary	C-1
2	Summary of Sample Depths	C-2
3	Summary of Analytical Parameters	C-3
4	Summary of Inorganic Analytical Results	C-4
5	Summary of Organic Analytical Results	C-6

TABLE 1
SAMPLE SUMMARY

Sample ID	Date Collected	Time Collected	Sampling Location	Latitude	Longitude	QA/QC Designation
WCS-01	11/21/02	1015	Inside fence line by the corner of old scale building on west side of the scrap yard	75.139811883°	39.979651063°	NA
WCS-02	11/21/02	1033	Inside fence line on western side of scrap yard along 3 rd Street	75.139649160°	39.980229325°	NA
WCS-03	11/21/02	1055	Inside fence line on northern side of scrap yard along Norris Street	75.139371570°	39.980693706°	NA
WCS-04	11/21/02	1108	Inside fence line on northern side of scrap yard along Norris Street	75.138954341°	39.980819379°	NA
WCS-05	11/21/02	1122	Inside fence line on eastern side of scrap yard along American Street	75.138777438°	39.980666972°	NA
WCS-06	11/21/02	1135	Outside fence line on northern side of scrap yard along Norris Street	75.139369165°	39.980903440°	NA
WCS-07	11/21/02	1153	Outside fence line on western side of scrap yard along 3 rd Street	75.139680230°	39.980765424°	NA
WCS-08	11/21/02	1205	Outside fence line on western side of scrap yard along 3 rd Street	75.139781923°	39.980271689°	NA
WCS-09	11/21/02	1234	Outside fence line on western side of scrap yard along 3 rd Street	75.139781923°	39.980271689°	Duplicate of WCS-08
WCS-10	11/21/02	1228	Inside fence line on southern side of scrap yard along Berks Street	75.139105674°	39.979507674°	NA

Notes:

NA
QA/QC
WCS

Not applicable
quality assurance/quality control
Washington Compressed Steel

TABLE 2
SUMMARY OF SAMPLE DEPTHS

Sample ID	Sample Depth (inches)
WCS-01	4.5
WCS-02	4.5
WCS-03	4
WCS-04	5
WCS-05	4.5
WCS-06	4
WCS-07	4.5
WCS-08	5.5
WCS-09	5.5
WCS-10	4

Notes:

WCS

Washington Compressed Steel

TABLE 3
SUMMARY OF ANALYTICAL PARAMETERS

Analytical Parameter	Matrix	Analytical Method	Number of Samples	Container	Detection Limit	Preservative	Laboratory
TAL metals and cyanide	Soil	ILM04.1	10	One 8-ounce CWM, glass jar with Teflon-lined lid	CRDL	Ice	Liberty Analytical Laboratory
TCL semivolatiles, pesticides, and PCBs	Soil	OLM04.2	10	One 8-ounce CWM, glass jar with Teflon-lined lid	CRQL	Ice	Ceimic Corp.
TCL volatile organics	Soil	OLM04.2	10	Three En Core® samplers with one 2-ounce CWM glass jar with Teflon-lined lid	CRQL	Ice	Ceimic Corp.

Notes:

CWM	Clear, wide-mouth
CRDL	Contract-required detection limit
CRQL	Contract-required quantitation limit
ILM	Inorganic low to medium
OLM	Organic low to medium
PCB	Polychlorinated biphenyl
TAL	Target analyte list
TCL	Target compound list

WASHINGTON COMPRESSED STEEL SITE
SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE SOIL SAMPLES COLLECTED FROM INSIDE THE FACILITY AREA
NOVEMBER 2002

FIELD SAMPLE NUMBER				WCS-02	WCS-03	WCS-04	WCS-05	WCS-10
LABORATORY SAMPLE NUMBER				C31Z5	C31Z6	C31Z7	C31Z8	C31Y9
PERCENT MOISTURE				20	24	15	26	18
UNITS				µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Volatile Organic Compounds								
Dilution Factor				1.04	1.16	2.08	0.94	1.06
	ERG	RBC	CRQL					
Trichlorofluoromethane	2,000,000,000	20,000,000	10	2 J	---	---	---	---
Acetone	2,000,000,000	20,000,000	10	6 B	14 B	26 B	12 B	12 B
Methylene Chloride	76,000,000	760,000	10	12 B	15 B	22 B	17 B	12 B
Tetrachloroethene	11,000,000	110,000	10	6 J	---	---	---	---
1,2-Dibromo-3-chloropropane	410,000	4,100	10	---	R	R	R	R
Semivolatile Organic Compounds								
Percent Moisture				20	22	13	26	20
Dilution Factor				29.8	29.7	150	29.6	30
	ERG	RBC	CRQL					
Phenanthrene	NL	NL	330	13,000	2,600 J	21,000 J	5,700 J	7,400 J
Anthracene	6,100,000,000	61,000,000	330	3,200 J	---	---	---	1,600 J
Di-n-butylphthalate	2,000,000,000	20,000,000	330	1,500 J	---	---	---	2,200 J
Carbazol	29,000,000	290,000	330	1,700 J	---	---	---	---
Fluoranthene	820,000,000	8,200,000	330	19,000	4,600 J	27,000 J	9,400 J	11,000 J
Pyrene	610,000,000	6,100,000	330	17,000	5,100 J	25,000 J	9,000 J	13,000
Butylbenzylphthalate	4,100,000,000	41,000,000	330	2,100 J	14,000	6,800 J	---	1,800 J
Benzo(a)anthracene	780,000	78,000	330	10,000 J	3,100 J	14,000 J	5,300 J	6,300 J
Chrysene	78,000,000	780,000	330	11,000 J	3,400 J	15,000 J	6,100 J	7,000 J
bis(2-Ethylhexyl)phthalate	41,000,000	410,000	330	5,700 B	85,000	8,400 B	8,100 B	7,900 B
Benzo(b)fluoranthene	780,000	7,800	330	7,900 J	3,900 J	15,000 J	5,800 J	5,800 J
Benzo(k)fluoranthene	7,800,000	78,000	330	8,400 J	3,700 J	11,000 J	5,400 J	6,600 J
Benzo(a)pyrene	780,000	780	330	8,700 J	4,000 J	12,000 J	5,900 J	6,100 J
Indeno(1,2,3-cd)pyrene	780,000	7,800	330	6,200 J	3,800 J	12,000 J	5,100 J	5,000 J
Benzo(g,h,i)perylene	NL	NL	330	5,800 J	3,000 J	15,000 J	4,000 J	3,900 J
Pesticide and Polychlorinated Biphenyl Compounds								
Percent Moisture				20	22	13	26	20
Dilution Factor				98.7/98.7	9.9/99	9.84/98.4	9.93/99.3	9.97/99.7
pH				6.7	6.7	6.9	6.9	6.8
	ERG	RBC	CRQL					
beta-BHC	320,000	3,200	1.7	---	---	81 J	34	45
delta-BHC	NL	NL	1.7	---	77 J	---	---	24 J
Heptachlor	130,000	1,300	1.7	---	600 + J	---	---	---
Aldrin	34,000	340	1.7	1,100 J	1,300 + J	740 + J	320 J	610 +
Heptachlor epoxider	63,000	630	1.7	400 J	600 + J	280 J	---	260 J
4,4'-DDE	1,700,000	17,000	3.3	830 J	260 J	45 J	110 J	270 J
Endrin	6,100,000	61,000	3.3	---	60 J	47 J	49	---
4,4'-DDD	2,400,000	24,000	3.3	49,000 +	93	---	130	240 J
Endosulfan Sulfate	NL	NL	3.3	2,500	---	---	---	51 J
4,4'-DDT	1,700,000	17,000	3.3	2,700 J	100 J	180 J	580 J	250 J
alpha-Chlordane	NL	NL	1.7	---	31 J	61 J	---	27 J
gamma-Chlordane	NL	NL	1.7	1,000	930 +	950 + J	290 J	520 +
Aroclor-1248	290,000	2,900	33	17,000 J	33,000 J	17,000 + J	5,500 J	8,400 + J
Aroclor-1254	290,000	2,900	33	---	11,000 J	27,000 +	7,100 + J	6,000 + J

Notes:

RBCs were taken and calculated from EPA Region III risk-based concentration Table, October 2002.
ERGs were derived from EPA Region III risk-based concentration Table, October 2002.
Bolded analytical results indicate an exceedance of that RBC value.
[] = Value is between the IDL and CRDL.
--- = Result not detected
+ = Results reported from diluted analysis
µg/kg = micrograms per kilogram

B = Not detected substantially above the level reported in laboratory or field blanks
CRQL = Contract required quantitation limit
ERG = Emergency removal guidelines
IDL = Instrument detection level
J = Analyte present. Reported value may not be accurate or precise.
K = Value is biased high.
L = Value is biased low.
NL = Not listed
R = Unusable result. Analyte may or may not be present in the sample
RBC = Risk-based concentration

WASHINGTON COMPRESSED STEEL SITE
SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE SOIL SAMPLES COLLECTED FROM OUTSIDE THE FACILITY AREA
NOVEMBER 2002

FIELD SAMPLE NUMBER	WCS-06			WCS-07			WCS-08			WCS-09					
LABORATORY SAMPLE NUMBER	C31Z9			C3200			C3201			C3202					
PERCENT MOISTURE	16			17			15			15					
UNITS	µg/kg			µg/kg			µg/kg			µg/kg					
										Field duplicate of sample WCS-08					
Volatile Organic Compounds															
Dilution Factor				1.16			0.96			1.19			1.14		
	ERG	RBC	CRQL												
Trichlorofluoromethane	2,000,000,000	20,000,000	10	---			1		J		---		---		
Acetone	2,000,000,000	20,000,000	10	12		B	8		B	9		B	4		B
Methylene Chloride	76,000,000	760,000	10	14		B	15		B	14		B	11		B
1,2-Dibromo-3-chloropropane	410,000	4,100	10	---			R		---		R		---		R
Semivolatile Organic Compounds															
Percent Moisture				15			18			17			16		
Dilution Factor				29.8			29.7			29.8			29.9		
	ERG	RBC	CRQL												
Phenanthrene	NL	NL	330	4,800		J	2,300		J	8,100		J	5,000		J
Fluoranthene	820,000,000	8,200,000	330	7,800		J	3,700		J	9,800		J	5,900		J
Pyrene	610,000,000	6,100,000	330	7,200		J	2,900		J	8,600		J	5,200		J
Butylbenzylphthalate	4,100,000,000	41,000,000	330	3,700		J	---			---			---		
Benzo(a)anthracene	780,000	78,000	330	4,000		J	1,500		J	4,400		J	2,500		J
Chrysene	78,000,000	780,000	330	4,500		J	1,700		J	5,300		J	2,900		J
bis(2-Ethylhexyl)phthalate	41,000,000	410,000	330	3,800		B	2,800		B	2,100		B	1,600		B
Benzo(b)fluoranthene	780,000	7,800	330	---			1,900		J	4,700		J	3,000		J
Benzo(k)fluoranthene	7,800,000	78,000	330	---			1,500		J	3,900		J	2,400		J
Benzo(a)pyrene	78000	780	330	4,100		J	1,600		J	3,900		J	2,400		J
Indeno(1,2,3-cd)pyrene	780,000	7,800	330	2,900		J	1,300		J	3,200		J	2,000		J
Benzo(g,h,i)perylene	NL	NL	330	2,000		J	---			2,200		J	1,600		J
Pesticide and Polychlorinated Biphenyl Compounds															
Percent Moisture				15			18			17			16		
Dilution Factor				1.00/9.97			1.00/10			0.99/9.87			0.99/9.933		
pH				7.5			6.6			7.6			7.6		
	ERG	RBC	CRQL												
beta-BHC	320,000	3,200	1.7	3.7		J	---			---			---		
Heptachlor	130,000	1,300	1.7	4.8		J	---			3.3		J	2.7		J
Aldrin	34,000	340	1.7	16		J	3.6		J	31		J	53 +		J
Heptachlor epoxider	63,000	630	1.7	14		J	---		J	10		J	---		
Dieldrin	36,000	360	3.3	---			59		J	---			---		
4,4'-DDE	1,700,000	17,000	3.3	13		J	110 +			32		J	47		J
Endrin	6,100,000	61,000	3.3	7.7		J	---			7.1		J	6.5		J
4,4'-DDD	2,400,000	24,000	3.3	13		J	4.9		J	12		J	13		J
4,4'-DDT	1,700,000	17,000	3.3	46		J	130 +		J	120 +		J	110 +		J
alpha-Chlordane	NL	NL	1.7	---			15			---			---		
gamma-Chlordane	NL	NL	1.7	74 +		J	---			90 +		J	87 +		J
Aroclor-1248	290,000	2,900	33	400			---			460		J	440		J
Aroclor-1254	290,000	2,900	33	3,200 +			600		J	2,900 +		J	2,400 +		J

Notes:

RBCs were taken and calculated from EPA Region III risk-based concentration Table, October 2002.
ERGs were derived from EPA Region III risk-based concentration Table, October 2002.
Bolded analytical results indicate an exceedance of that RBC value.
[] = Value is between the IDL and CRDL.
--- = Result not detected
+ = Results reported from diluted analysis
µg/kg = micrograms per kilogram

B = Not detected substantially above the level reported in laboratory or field blanks
CRQL = Contract required quantitation limit
ERG = Emergency removal guidelines
IDL = Instrument detection level
J = Analyte present. Reported value may not be accurate or precise.
K = Value is biased high.
L = Value is biased low.
NL = Not listed
R = Unusable result. Analyte may or may not be present in the sample
RBC = Risk-based concentration

WASHINGTON COMPRESSED STEEL SITE
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SURFACE SOIL SAMPLES COLLECTED FROM INSIDE THE FACILITY AREA
NOVEMBER 2002

FIELD SAMPLE NUMBER				WCS-01		WCS-02		WCS-03		WCS-04		WCS-05		WCS-10			
LABORATORY SAMPLE NUMBER				MC31Y8		MC31Z5		MC31Z6		MC31Z7		MC31Z8		MC31Y9			
PERCENT SOLID				74.8		81.8		73.6		87.8		74.2		80.3			
UNITS				mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg			
Metals																	
Dilution Factor				1		1/20		1/20		1/20		1/2		1/20			
	ERG	RBC	CRDL														
Aluminum	20,000,000	200,000	40	6,380	J	10,500	J	9,180	J	12,400	J	5,160	J	9,840	J		
Antimony	8,200	82	12	[7.0]		1,330		22.1		45.8		29.8		90.7			
Arsenic	380	3.8	2	15.1		103		13.7		38.6		41.4		30.5			
Barium	1,400,000	14,000	40	180		786		434		872		1,160		2,070			
Beryllium	41,000	410	1	[0.37]	B	[0.49]	B	[0.54]	B	[0.59]	B	[0.38]	B	[0.72]	B		
Cadmium	20,000*	100*	1	9.9		12.8		18.2		38.2		11.1		14.3			
Calcium	NL	NL	1,000	6,230		22,800		36,500		16,600		19,700		16,100			
Chromium	61,000**	610**	2	102		404		282		752		475		8,070			
Cobalt	410,000	4,100	10	18.6		21.4		16.3		43.4		24.4		33.9			
Copper	820,000	8,200	5	517	J	1,560	J	1,450	J	2,840	J	724	J	1,560	J		
Iron	6,100,000	61,000	20	36,200		128,000	+	113,000	+	158,000	+	132,000	+	192,000	+		
Lead	NL	NL	0.6	1,510		65,500	+	3,560		4,410		12,200	+	6,220			
Magnesium	NL	NL	1,000	4,440		13,700		11,500		5,280		4,140		4,700			
Manganese	2,900,000***	29,000***	3	552	J	2,030	J	1,420	J	1,770	J	1,500	J	2,250	J		
Mercury	NL	NL	0.1	2.7	K	2.4	K	2.8	K	3.3	K	4.2	K	4.1	K		
Nickel	410,000	4,100	8	142	J	531	J	421	J	980	J	220	J	6,620	J		
Potassium	NL	NL	1,000	[492]		[570]		[624]		[621]		[507]		[1,150]			
Selenium	100,000	1,000	1	1.6	L	4.2		2.9		6.7		4.3		16.4			
Silver	100,000	1,000	2	[0.95]		4.5		[1.7]		4.3		[1.4]		2.7			
Sodium	NL	NL	1,000	---		---		---	+	---	+	---		---	+		
Thallium	1,400	14	2	---		5.4	L	4.3	L	7.7	L	7.3	L	9.9	L		
Vanadium	140,000	1,400	10	64.5		54.9		66.5		104		63.5		69			
Zinc	6,100,000	61,000	4	1,470		4,800		9,020	+	20,900	+	4,620		9,860	+		
Cyanide	410,000	4,100	0.5	1.1	L	4.6	L	2	L	5.5	L	7	L	2.0	L		

Notes:

RBCs were taken and calculated from EPA Region III risk-based concentration Table, October 2002.

ERGs were derived from EPA Region III risk-based concentration Table, October 2002.

Bolded analytical results indicate an exceedance of that RBC value.

[] = Value is between the IDL and CRDL.

--- = Result not detected

+ = Results reported from diluted analysis

* = ERG and RBC values listed are the cadmium-water value.

** = ERG and RBC values listed are the chromium VI value.

*** = ERG and RBC values are the manganese-nonfood value.

B = Not detected substantially above the level reported in laboratory or field blanks

CRDL = Contract-required detection limit

ERG = Emergency removal guidelines

IDL = Instrument detection level

J = Analyte present. Reported value may not be accurate or precise.

K = Value is biased high.

L = Value is biased low.

mg/kg = milligrams per kilogram

NL = Not listed

RBC = Risk-based concentration

TABLE 4 (continued)
WASHINGTON COMPRESSED STEEL SITE
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SURFACE SOIL SAMPLES COLLECTED FROM OUTSIDE THE FACILITY AREA
NOVEMBER 2002

FIELD SAMPLE NUMBER				WCS-06	WCS-07	WCS-08	WCS-09
LABORATORY SAMPLE NUMBER				MC31Z9	MC3200	MC3201	MC3202
PERCENT SOLID				74.2	86.3	83.6	85.6
UNITS				mg/kg	mg/kg	mg/kg	mg/kg
							Field duplicate of sample WCS-08
Metals							
Dilution Factor				1	1	1	1
	ERG	RBC	CRDL				
Aluminum	20,000,000	200,000	40	6,720 J	8,770 J	6,340 J	7,290 J
Antimony	8,200	82	12	[5.7]	[2.6]	[5.5]	[4.5]
Arsenic	380	3.8	2	10.2	11.4	12.9	8.1
Barium	1,400,000	14,000	40	253	206	346	289
Beryllium	41,000	410	1	[0.74]	[0.70]	[0.50] B	[0.44] B
Cadmium	20,000*	100*	1	3.7	2.1	9.5	15.6
Calcium	NL	NL	1,000	14,400	4,510	21,700	20,000
Chromium	61,000**	610**	2	64.9	51.8	131	163
Cobalt	410,000	4,100	10	[7.3]	[5.8]	[10.6]	7.3
Copper	820,000	8,200	5	303 J	134 J	916 J	414 J
Iron	6,100,000	61,000	20	30,900	24,700	40,400	28,500
Lead	NL	NL	0.6	798	966	1,820	1,370
Magnesium	NL	NL	1,000	5,220	3,160	4,550	3,760
Manganese	2,900,000***	29,000***	3	456 J	342 J	689 J	429 J
Mercury	NL	NL	0.1	1.8 K	0.5 K	3.1 K	4.8 K
Nickel	410,000	4,100	8	66.7 J	31.7 J	512 J	128 J
Potassium	NL	NL	1,000	[1,090]	1,450	[823]	1,160
Selenium	100,000	1,000	1	[0.96] L	[1.1] L	1.7 L	[0.73] L
Silver	100,000	1,000	2	[0.46]	[0.24]	[0.86]	[0.90]
Sodium	NL	NL	1,000				
Thallium	1,400	14	2	--- UL	--- UL	--- UL	--- UL
Vanadium	140,000	1,400	10	54.8	46	54.2	38.6
Zinc	6,100,000	61,000	4	1,020	738	3,470	2,640
Cyanide	410,000	4,100	0.5	0.6 L	1.2 L	2.6 L	2.6 L

Notes:

RBCs were taken and calculated from EPA Region III risk-based concentration Table, October 2002.

ERGs were derived from EPA Region III risk-based concentration Table, October 2002.

Bolded analytical results indicate an exceedance of that RBC value.

[] = Value is between the IDL and CRDL.

--- = Result not detected

+ = Results reported from diluted analysis

* = ERG and RBC values listed are the cadmium-water value.

** = ERG and RBC values listed are the chromium VI value.

*** = ERG and RBC values are the manganese-nonfood value.

B = Not detected substantially above the level reported in laboratory or field blanks

CRDL = Contract-required detection limit

ERG = Emergency removal guidelines

IDL = Instrument detection level

J = Analyte present. Reported value may not be accurate or precise.

K = Value is biased high.

L = Value is biased low.

mg/kg = milligrams per kilogram

NL = Not listed

RBC = Risk-based concentration

UL = Value is not detected and the quantitation limit is probably higher.

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

ATTACHMENT A
INORGANIC DATA VALIDATION REPORT
(Eighteen Pages)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SCIENCE CENTER
701 MAPES ROAD
FORT MEADE, MD 20755-5350

DATE: January 13, 2003

SUBJECT: Region III Data QA Review

FROM: (b) (4) [redacted] *xx*
Region III ESAT RPO (3ES20)

TO: Greg Ham
Regional Program Manager (3HS31)

Attached is the inorganic data validation report for the Washington Compressed Steel Site (Case/DAS#31206; SDG #:MC31Y8) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III ESD.

If you have any questions regarding this review, please call me at (410) 305-2629.

Attachment

cc: (b) (4) [redacted] (Tetra Tech EMI)

TO File #: 0007 TDF #: 1236

OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

ESAT DATA VALIDATION EVALUATION CHECKLIST

Contract #68-W-01-018

Order #: 0007 TDF #: 1236 Revision #: 0 Case/DAS #: 31206
 Name: Washington Compressed Steel SDG #: MC31Y8
 Analysis Type: Inorganic SOW #: ILM04.1
 Reviewer: Reginald Howard
 Laboratory Code: LIBRTY

CLP TPO: (b) (4)
 RPM: Greg Ham (3HS31)
 cc: (b) (4)
Tetra Tech EMI

Region: IV

Number of hours spent on review: 16
 Number of samples: 10
 Validation Type: IM2

Submitted to EPA: 1/7/03

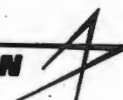
<u>CRITERIA</u>	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
Compliant according to Section III protocol	<u>✓</u>	<u> </u>	<u> </u>
Quality of report	<u>✓</u>	<u> </u>	<u> </u>
Modifiers applied correctly	<u>✓</u>	<u> </u>	<u> </u>
Consistency between narrative and data summary form(s)	<u>✓</u>	<u> </u>	<u> </u>
Handwritten transcription	<u>✓</u>	<u> </u>	<u> </u>

<u>EFFICIENCY OF CONTRACTOR</u>	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
Approval recommended for current submission	<u>✓</u>	<u> </u>	<u> </u>
Time spent on review reasonable	<u>✓</u>	<u> </u>	<u> </u>
Technical Evaluation	<u>3.8</u>	<u> </u>	<u>RD</u> EPA Oversight

OVERSIGHT

IES	EPA	Oversight <u>RD</u>	ESAT
Received at EPA	<u>1/7/03</u>		
Oversight assigned	<u>1/7/03</u>	<u>RD 1/8/03</u>	
Oversight received			
Oversight completed	<u>1/13/03</u>		
Feedback given			
Forwarded to RPM			<u>1/14/03 D.H.</u>

LOCKHEED MARTIN



DATE: January 7, 2003

SUBJECT: Inorganic Data Validation (IM2 Level)
Case: 31206
SDG: MC31Y8
Site: Washington Compressed Steel

FROM: (b) (4) R.H. (b) (4) M.M.
Inorganic Data Reviewer Senior Oversight Chemist

TO: (b) (4)
ESAT Regional Project Officer

OVERVIEW

Case 31206, Sample Delivery Group (SDG) MC31Y8, consisted of ten (10) soil samples analyzed for total metals and cyanide (CN⁻) by CompuChem a Division of Liberty Analytical Corporation (LIBRTY). The sample set included one (1) field duplicate pair. Samples were analyzed in accordance with Contract Laboratory Program (CLP) Statement of Work (SOW) ILM04.1 through Routine Analytical Services (RAS) program.

SUMMARY

All samples were successfully analyzed for all Target Analyte List (TAL) parameters. Areas of concern with respect to data usability are listed below.

Data in this case have been impacted by outliers present in the continuing calibration blank, matrix spike, laboratory duplicate, cooler chest temperature and Contract Required Detection Limit (CRDL) standard analyses. Details of these outliers are discussed under "Minor Problems"; specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on Data Summary Forms (DSFs).

MINOR PROBLEMS

The continuing calibration blank had a reported result greater than Instrument Detection Limit (IDL) for beryllium (Be). Positive results reported for this analyte in affected samples which are less than or equal to five times ($\leq 5X$) blank concentrations may be biased high and have been qualified "B" on DSFs.

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

[] = Analyte present. As values approach the IDL the quantitation may not be accurate.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

APPENDIX B
DATA SUMMARY FORMS

DATA SUMMARY FORM: INORGANIC

Page 1 of 2

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SDG : MC31Y8
WASHINGTON COMPRESSED STEEL
LIBRTY

Number of Soil Samples : 10
Number of Water Samples : 0

umber :	MC31Y8	MC31Y9	MC31Z5	MC31Z6	MC31Z7						
Location :	WCS-01	WCS-010	WCS-02	WCS-03	WCS-04						
	Soil	Soil	Soil	Soil	Soil						
	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg						
mpled :	11/21/2002	11/21/2002	11/21/2002	11/21/2002	11/21/2002						
mpled :	10:15	12:12	10:33	10:55	11:08						
	74.8	80.3	81.8	73.8	87.8						
Factor :	1.0	1.0 / 20.0	1.0 / 20.0	1.0 / 20.0	1.0 / 20.0						
E	CRDL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
IUM	40	6380	J	9840	J	10500	J	9180	J	12400	J
IN	2	15.1		30.5		103		13.7		38.6	
IC	2	15.1		30.5		103		13.7		38.6	
LIUM	1	[0.37]	B	[0.72]	B	[0.49]	B	[0.54]	B	[0.59]	B
JM	1000	6230		16100		22800		36500		16600	
RT	10	18.6		33.9		21.4		16.3		43.4	
RE	20	36200		192000 +		128000 +		113000 +		158000 +	
ESIUM	1000	4440		4700		13700		11500		5280	
ANES	0.1	2.7	K	4.1	K	2.4	K	2.8	K	3.3	K
RY	0.1	2.7	K	4.1	K	2.4	K	2.8	K	3.3	K
SIUM	1000	[492]		[1150]		[570]		[624]		[621]	
UM	2	[0.95]		2.7		4.5		[1.7]		4.3	
UM	2		UL	9.9	L	5.4	L	4.3	J	7.7	L
UM	4	1470		9860 +		4800		9020 +		20900 +	
DE	0.5	2.4		2.0		2.4		2.4		5.5	

= Contract Required Quantitation Limit

Calculate sample quantitation limits: (CRDL * Dilution Factor) / (%Solids/ 100)

Result reported from diluted analysis.

SEE NARRATIVE FOR CODE DEFINITIONS

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Page 2 of 2

31206

SDG : MC31Y8
WASHINGTON COMPRESSED STEEL
LIBRTY

Sample Number :	MC3128	MC3129	MC3200	MC3201	MC3202						
Sample Location :	WCS-05	WCS-06	WCS-07	WCS-08	WCS-09						
Sample ID :				Field Dup of MC3202	Field Dup of MC3201						
Sample Date :	Soil	Soil	Soil	Soil	Soil						
Sample Time :	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg						
Sample Depth :	11/21/2002	11/21/2002	11/21/2002	11/21/2002	11/21/2002						
Sample Time :	11:22	11:35	11:53	12:05	12:34						
Sample Depth :	74.2	86.3	81.8	83.6	85.6						
Dilution Factor :	1.0 / 2.0	1.0	1.0	1.0	1.0						
TEST ELEMENT	CRDL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	40	5160	J	6720	J	8770	J	6430	J	7290	J
ARSENIC	2	41.4		10.2		11.4		12.9		8.1	
BARIUM	1	[0.38]	B	[0.74]		[0.70]		[0.50]	B	[0.44]	B
BROMINE	1000	19700		14400		4510		21700		20000	
CADMIUM	10	24.4		[7.3]		[5.8]		[10.6]		[7.3]	
CHLORINE	20	132000 +		30900		24700		40400		28500	
CHROMIUM	1000	4140		5220		3160		4550		3760	
COPPER	0.1	4.2	K	1.8	K	0.52	K	3.1	K	4.8	K
FLUORINE	1000	[507]		[1090]		1450		[823]		1160	
IRON	2	[1.4]		[0.46]		[0.24]		[0.86]		[0.90]	
LEAD	2	7.3	L		UL		UL		UL		UL
MANGANESE	4	4620		1020		738		3470		2630	
NICKEL	0.5	0.63									

L = Contract Required Quantitation Limit.

Calculate sample quantitation limits: (CRDL * Dilution Factor) / (%Solids/ 100)
Result reported from diluted analysis.

SEE NARRATIVE FOR CODE DEFINITIONS

Revised 09/99

APPENDIX C
CHAIN-OF-CUSTODY RECORDS

Region: 3	Date Shipped: 11/21/2002	Chain of Custody Record	Sampler Signature: (b) (4)
Project Code:	Carrier Name: FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	Airbill: 838267719546	(b) (4) 11/21/02 1542	
CERCLIS ID:	Shipped to: Liberty Analytical	2	
Spill ID:	501 Madison Avenue	3	
Site Name/State: Washington Compressed Steel/PA	Cary NC 27513	4	
Project Leader: (b) (4)	(919) 379-4080		
Action: Removal Action			
Sampling Co: Tetra Tech Em Inc			

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MC31Y8	Soil (0"-12")/ (b) (4)	L/G	TM/CN (14)	794 (Ice Only) (1)	WCS-01	S: 11/21/2002 10:15	C31Y8	-
MC31Y9	Soil (0"-12")/ (b) (4)	L/G	TM/CN (14)	799 (Ice Only) (1)	WCS-010	S: 11/21/2002 12:22	C31Y9	-
MC31Z5	Soil (0"-12")/ (b) (4)	L/G	TM/CN (14)	832 (Ice Only) (1)	WCS-02	S: 11/21/2002 10:33	C31Z5	-
MC31Z6	Soil (0"-12")/ (b) (4)	L/G	TM/CN (14)	838 (Ice Only) (1)	WCS-03	S: 11/21/2002 10:55	C31Z6	-
MC31Z7	Soil (0"-12")/ (b) (4)	L/G	TM/CN (14)	844 (Ice Only) (1)	WCS-04	S: 11/21/2002 11:08	C31Z7	-
MC31Z8	Soil (0"-12")/ (b) (4)	L/G	TM/CN (14)	850 (Ice Only) (1)	WCS-05	S: 11/21/2002 11:22	C31Z8	-
MC31Z9	Soil (0"-12")/ (b) (4)	L/G	TM/CN (14)	856 (Ice Only) (1)	WCS-06	S: 11/21/2002 11:35	C31Z9	-
MC3200	Soil (0"-12")/ (b) (4)	L/G	TM/CN (14)	862 (Ice Only) (1)	WCS-07	S: 11/21/2002 11:53	C3200	-
MC3201	Soil (0"-12")/ (b) (4)	L/G	TM/CN (14)	868 (Ice Only) (1)	WCS-08	S: 11/21/2002 12:05	C3201	-
MC3202	Soil (0"-12")/ (b) (4)	L/G	TM/CN (14)	874 (Ice Only) (1)	WCS-09	S: 11/21/2002 12:34	C3202	-

(D.V.)
1/6/02 Per memo to file
DEC 2002
RECEIVED
Dup of C3201
MC3201

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: MC31Y8	Analyst Signature: (b) (4)	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Composite = C, Grab = G	Shipment Iced? _____
TM/CN = CLP TAL Total Metals and Cyanide			

TR Number: 3-373675543-112102-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

REGION COPY

U.S. EPA Region III Sample Scheduling Request Form

975

CASE No: CT1574 31206		DAS No:		NSF No:	
November 11,		Data Validation Level: M2, I M2		EPA Lab Reply:	
Name: Washington Compressed Steel				Cost:	
Address: 1900 N. American Street			City: Philadelphia		State: PA
Latitude:		Longitude:		Anal +Val Data TAT:35 days	
Type: Superfund		CERCLIS No: NONE		Activity: RS Removal Evaluation	
Permit No: 03T03N50102DA3T5LS00		Operable Unit:		Spill ID:	
Owner: (b) (4)		RPM/PO: Greg Ham (3HS31)		Site Leader: (b) (4)	
Phone: (b) (4)		Phone: 215-814-3194		Phone: (b) (4)	
FAX: (b) (4)		FAX: 215-814-3254		FAX: (b) (4)	
E-mail: (b) (4)		E-mail: ham.greg@epa.gov		E-mail: (b) (4)	
CO: Deborah Eble		Contract Type: START 3 Eastern Area		Prime: Tetra Tech EM Inc. Sub:	
Assignment Date:		Analytical TAT: 14 days		Ship Date From: November 21, 2002	
Analytic Lab: CEIMIC				Ship Date To: November 22, 2002	
Analytic Lab: 14 days		LIBRTV		Carrier:	
SAMPLES	METHOD	PARAMETER		MATRIX	
	ILM04.1	TAL Metals & Cyanide		Soil	
	OLM04.2	TCL Organics		Soil	
				OSC needs verbal result faxed to him at above number when recieved at RSCC.	

: Data validation levels M3 & IM2 require justification. QC field samples must be included as part of total number of samples.

Special Instructions: OSC needs verbal result faxed to him at above number when recieved at RSCC. Please arrange for a Saturday try incase the samplers cannot get the samples out on Thursday. Thursday is the only day they have access to the facility.
 Project / Project Plan ID / Permit ID: Site characterization.
 Program / Project / Permit Reporting Limits As per method
 O (QC Requirements)

VALIDATOR'S COPY



Tetra Tech EM Inc.

709 Chelsea Parkway ♦ Boothwyn, PA 19061 ♦ (610) 485-6410 ♦ FAX (610) 485-8587

December 20, 2002

MEMO TO FILE

CASE 31206

Washington Compressed Steel

RSCC
U.S. EPA Region III OAS/QA
Environmental Science Center
701 Mapes Road
Ft. Meade, MD 20755

Dear Ms. Jeffery:

This memo is written to correct the sampling time on the Inorganic Traffic Report Chain of Custody Record numbers 3-373675543-112102-0001 for sample MC31Y9. The correct sampling time is 12:12. This memo is further written to correct the sampling time on the Organic Traffic Report Chain of Custody Record numbers 3-373675543-112102-0003 for sample C31Y9. The correct sampling time is 12:12. The tag number 798 was omitted from the tag for the moisture jar for sample C31Y9. Tag number 878 was omitted from the tag for the moisture jar sample C3202.

Please note these changes.

Sincerely,

(b) (4)



cc: EPA OSC Greg Ham (3HS31)
START 3 TDD Files

APPENDIX D

LABORATORY CASE NARRATIVE

: COMPUCHEN Contract: 68W00082
: LIBRTY Case No.: 31206 SAS No.: _____ SDG No.: MC3173
ILM04.1

MC31Y8
MC31Y8D
MC31Y8S
MC31Y9
MC31Z5
MC31Z6
MC31Z7
MC31Z8
MC31Z9
MC3200
MC3201
MC3202

MC31Y8-1	
WG21598-2	
WG21598-1	
MC31Y8-2	
MC31Y8-3	
MC31Y8-4	
MC31Y8-5	
MC31Y8-6	
MC31Y8-7	
MC31Y8-8	
MC31Y8-9	
MC31Y8-10	

Yes/No	<u>YES</u>
Yes/No	<u>YES</u>
Yes/No	NO

certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed herein. Release of the data contained in this hardcopy data package and in the computer-readable data stored on diskette has been authorized by the Laboratory Manager or the Manager's designee, as required by the following signature.

Figure

Data Reviewer II 3

ILM04.1

CompuChem**a Division of Liberty Analytical Corp.**

501 Madison Avenue Cary, NC 27513

SDG NARRATIVE**CASE # 31206 SDG # MC31Y8****CONTRACT # 68W00082**

The indicated Sample Delivery Group (SDG) consisting of ten (10) soil samples was received into the laboratory information management system (LIMS) on November 22, 2002; intact and in good condition with Chains of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed, in accordance with EPA - CLP Statement of Work (SOW) document ILM04.1 for CLP TAL total metals and cyanide.

The correlation coefficients for the mercury and cyanide analytical runs are confirmed to be ≥ 0.9950 .

The cooler temperature bottle was present with samples received on November 22, 2002; and sample temperature was 7.3 degrees Celsius.

The samples were analyzed, in accordance with EPA - CLP Statement of Work (SOW) document ILM04.1 for CLP TAL total metals and cyanide.

The correlation coefficients for the cyanide and mercury analytical runs are confirmed to be ≥ 0.9950 .

Analyte results qualified by a "C" flag on the raw data indicates a saturated condition that is remedied by dilution. Analyte results qualified by a "K" flag on the raw data indicates an interference condition that requires a dilution.

EQUATIONS FOR SOLID SAMPLE CALCULATIONS:

Client sample MC31Y8 is used for illustration.

Any sample result that is < the instrument detection limit (IDL) will be entered at the IDL for that analyte.

ICP Equation:

Equation for obtaining metals sample results in mg/Kg as presented on FORM I data sheets from ICP instrument acquired results in ug/L (ppb).

$$\text{Concentration (\% solids) (mg/Kg)} = \frac{C \times D \times V}{W \times S}$$

Where

C = concentration (ug/L)

D = dilution factor

V = final volume in liters after sample preparation

W = weight in grams of wet sample

S = % solids/100

Example: aluminum result ug/L to mg/Kg.

23852.93 ug/L (C) x 1 (D) x 0.2 L (V)

$\frac{23852.93 \text{ ug/L (C)} \times 1 \text{ (D)} \times 0.2 \text{ L (V)}}{1.0 \text{ g (W)} \times 0.748 \text{ (S)}} = 6377.8 \text{ mg/Kg reported as } 6380 \text{ mg/Kg}$

Mercury Equation:

Equation for obtaining mercury sample results in mg/Kg as presented on FORM I data sheets from instrument acquired results in ug/L (ppb).

$$\frac{A \times D \times F}{B \times E}$$

Where

A = ug/L Hg

B = wet weight of sample

D = dilution factor to bring sample into analysis range

E = % solids/100

F = final volume in liters (0.1 L)

Example: mercury result ug/L to mg/Kg

4.004 ug/L (A) x 1 (D) x 0.1 (F)

0.2 g (B) x 0.748 (E)

= 2.68 mg/Kg reported as 2.7 mg/Kg

Cyanide Equation:

Equation for obtaining cyanide sample results in mg/Kg as presented on FORM I data sheets from instrument acquired results in ug/L (ppb).

$$\frac{A \times D \times F}{B \times E}$$

Where

A = ug/L CN

B = wet weight of sample

D = dilution factor to bring sample into analysis range

E = % solids/100

F = final volume in liters (0.05 L)

Example: cyanide result ug/L to mg/Kg

16.645218 ug/L (A) x 1 (D) x 0.05 L (F)

1.00g (B) x 0.748 (E)

= 1.113 mg/Kg reported as 1.1 mg/Kg

SAMPLE IDs:

The following customer IDs are associated with this SDG:

MC31Y8	MC31Y9	MC31Z5	MC31Z5	MC31Z6	MC31Z7
MC31Z8	MC31Z9	MC3200	MC3201	MC3202	

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV), blanks (ICB, & CCB), and interference check samples (ICSA & ICSAB) associated with this data were confirmed to be within EPA CLP allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verifications (LCSS & PBS) were found to be within acceptable ranges and all field samples were prepared and analyzed within the contract specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spike, CCN = WG21598-1 (MC31Y8S) was found to be outside CLP control limits for mercury, nickel, and thallium. The reported concentrations for these analytes are flagged with an "N" on all associated Form 1 and on Form 5a.

An "N" indicates a matrix-related interference in the sample preparation procedure &/or analysis for the flagged analyte. This is normally the consequence of a relatively high anionic content in the sample or (for some sediments) an inconsistent sample matrix relative to that analyte.

CLP control limits for matrix spike recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

Post-digestion spikes are mandatory for analytes demonstrating unsatisfactory matrix spike recoveries during ICP analysis (excluding silver). The results of such spikes are presented on Form 5b.

Unsatisfactory recovery of post-digestion spikes of this type do not have bearing upon the aforementioned "N" flags, but may indicate interference during analysis &/or a solution matrix which is hostile to the analyte in question.

Satisfactory recovery of an analyte in a post-digestion spike of this type implies interference by the required preparation procedure or in the sample matrix itself. Lack of uniformity for an analyte in sediments will also result in satisfactory recovery of post-digestion spikes after failure in the related matrix spike.

The sample matrix duplicate, CCN = WG21598-2 (MC31Y8D) was outside CLP control limits for aluminum, arsenic, cadmium, calcium, copper, iron, lead, magnesium, manganese, nickel, vanadium, and zinc. The reported concentrations for these analytes are flagged with a "*" on all associated Form 1 and on Form 6.

A "*" indicates a non-homogeneous sample matrix in regard to the flagged analyte. This is normally the consequence of a relatively coarse texture or of a mixed-matrix in sediment samples.

CLP control limits for duplicate determinations are $\pm 20\%$ Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and \pm the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

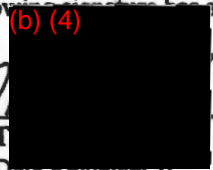
A five-fold serial dilution of sample, CCN = MC31Y8-1 (MC31Y8L) was performed in accordance with CLP requirements for ICP analysis.

The adjusted sample concentrations were inside CLP control limits for the requested analytes.

CLP control limits for serial dilution are defined as a deviation less than or equal to 10% in the dilution-adjusted concentrations from the original values for all analyte concentrations with values greater than fifty (50) times their respective Instrument Detection Limit (IDL) in the original sample.

The laboratory manager or his designee, as verified by the following signature, has authorized release of the data contained in this hard copy data package.

(b) (4)


Data Reviewer II
December 3, 2002

CompuChem**a Division of Liberty Analytical Corp.**

501 Madison Avenue Cary, NC 27513

DATA REPORTING QUALIFIERS FOR INORGANICS

On Form I, under the column labeled "C" for concentration qualifier and "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on Form I for each analyte.

The C (concentration) qualifiers used are:

- U:** This flag indicates the analyte was analyzed for but not detected. This reported value was obtained from a reading that was less than the Instrument Detection Limit (IDL). The IDL will be adjusted to reflect any dilution and, for soils, the percent moisture.
- B:** This flag indicates the analyte was analyzed for and the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).

The Q qualifiers used are:

- E:** This flag indicates an estimated value. This flag is used:
1. When the serial dilution (a five fold dilution for CLP and a five fold dilution for SW-846 method 6010B) results are not within 10%. The analyte concentration must be sufficiently high (minimally a factor of 50X above the IDL in the original sample).
- N:** This flag indicates the sample spike recovery is outside of control limits:
- :** This flag is used for duplicate analysis when the sample and the sample duplicate results are not within control limits.

The extensions: D, S, SD, L, A, added to the end of the client ID represent as follows:

- D:** matrix duplicate
S: matrix spike
SD: matrix spike duplicate
L: serial dilution
A: post digestion spike

Method Codes:

- P:** ICP PLASMA
CV: MERCURY COLD VAPOR AA
CA: MIDI-DISTILLATION SPECTROPHOTOMETRIC

ATTACHMENT B
ORGANIC DATA VALIDATION REPORT
(Forty two Pages)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SCIENCE CENTER
701 MAPES ROAD
FORT MEADE, MD 20755-5350

DATE : January 16, 2003
SUBJECT: Region III Data QA Review
FROM : (b) (4) [redacted] and [redacted]
Region III ESAT RPO (3ES20)
TO : Greg Hamm
Regional Project Manager (3HS31)

Attached is the organic data validation report for the Washington Compressed Steel site (Case #: 31206, SDG#: C31Y9) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III ESD.

If you have any questions regarding this review, please call me at (b) (4) [redacted]

Attachments

cc: (b) (4) [redacted] (TETRA TECH EMI)

TO File #: 0007

TDF#: 1237

OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

ESAT DATA VALIDATION EVALUATION CHECKLIST

Contract #68-W-01-018

sk Order #: 0007 TDF #: 1237 Revision #: 0 Case/DAS #: 31206
 e Name: WASHINGTON COMPRESSED STEEL SDGs #: C31Y9
 alysis Type: ORGANIC SOW #: OLM04.2
 viewer: (b) (4)
 P Laboratory Code: (CEIMIC)

PA CLP TPO: JENNIE HAN-LIU
 PA RPM: GREG HAMM (3HS31)
 cc: (b) (4)
 (TETRA TECH EMI)

Region: 1

Number of hours spent on review: 15
 Number of samples: 9
 Validation Type: M2

ate submitted to EPA: 1/15/03

CRITERIA	YES	NO	COMMENTS
Format according to Region III protocol	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Clarity of report	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Qualifiers applied correctly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Consistency between narrative and data summary form(s)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Error-free transcription	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

EFFICIENCY OF CONTRACTOR	YES	NO	COMMENTS
Approval recommended for current submission	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Time spent on review is reasonable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Technical Evaluation	3.1		Michael Mahoney EPA Oversight

ESD OVERSIGHT

DATES

Received at EPA
 Oversight assigned
 Oversight received
 Oversight completed
 Feedback given
 Mailed to RPM

EPA

Oversight

ESAT

1/15/03


1/15/03
 1/16/03

1/16/03

1/22/03 D.H.

DATE: January 15, 2003

SUBJECT: Level M2 Organic Data Validation for Case 31206
SDG: C31Y9
Site: Washington Compressed Steel

FROM: (b) (4)  AL
Senior Data Reviewer

(b) (4)  on, on
Senior Oversight Chemist

TO: (b) (4) 
ESAT Region 3 Project Officer

OVERVIEW

Case 31206, Sample Delivery Group (SDG) C31Y9, consisted of nine (9) soil samples submitted to Ceimic Corporation (CEIMIC) for volatile, semivolatile and pesticide/PCB analyses. The sample set included one (1) field duplicate pair. Samples were analyzed according to Contract Laboratory Program (CLP) Statement of Work (SOW) OLM04.2 through Routine Analysis Services (RAS) program.

SUMMARY

Data were validated according to Innovative Approaches for Validation of Organic Data, Level M2. This level of review includes assessment of all Quality Assurance/Quality Control (QA/QC) data and review of chromatograms, but excludes review of raw data and sample spectra. All samples were successfully analyzed for all target compounds except as noted in "Major Problem" section.

All nine (9) soil samples reported positive results for one or more Aroclors (with concentrations ranging to 33000 ug/Kg). In pesticide/PCB analyses where multi-component compounds are present, false positives for single component compounds are common. Caution should be exercised in interpreting pesticide results in these samples.

MAJOR PROBLEM

- Response Factors (RFs) were less than 0.05 for volatile target compound 1,2-dibromo-3-chloropropane in the continuing calibrations. No positive result was reported for this compound in affected samples. The quantitation limit for 1,2-dibromo-3-chloropropane in affected samples was qualified "R" on Data Summary Forms (DSFs).

GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

NO CODE = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

Q = No analytical result.

Appendix B

Data Summary Forms

DATA SUMMARY FORM: VOLATILES

Page 1 of 10

31206

SDG : C31Y9

Number of Soil Samples : 9

WASHINGTON COMPRESSED STEEL

Number of Water Samples : 0

CEIMIC

Sample Number :		C31Y9	C31Z5		C31Z6		C31Z7		C31Z8		
Sampling Location :		WCS-010	WCS-02		WCS-03		WCS-04		WCS-05		
QC:											
Matrix :		Soil		Soil		Soil		Soil		Soil	
Sampled :		11/21/2002		11/21/2002		11/21/2002		11/21/2002		11/21/2002	
Sampled :		12:12		10:33		10:55		11:08		11:22	
Moisture :		18		20		24		15		28	
Dilution Factor :		1.06		1.04		1.16		2.08		0.94	
File Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Chlorodifluoromethane	10										
Chloromethane	10										
1,1-Chloroethane	10										
Chloromethane	10										
Chloroethane	10										
Chlorofluoromethane	10			2	J						
1,1-Dichloroethene	10										
1,2-Trichloro-1,2,2-trifluoroethane	10										
Benzene	10	12	B	6	B	14	B	26	B	12	B
Carbon Disulfide	10										
Ethyl Acetate	10										
Ethylene Chloride	10	12	B	12	B	15	B	22	B	17	B
1,1,2-Trichloroethane	10										
Ethyl tert-Butyl Ether	10										
1,1-Dichloroethane	10										
1,2-Dichloroethene	10										
Butanone	10										
Chloroform	10										
1,1-Trichloroethane	10										
Cyclohexane	10										
Carbon Tetrachloride	10										
Benzene	10										
1,2-Dichloroethane	10										
Chloroethane	10										
Ethylcyclohexane	10										
1,2-Dichloropropane	10										
1,1-Dichloromethane	10										
1,3-Dichloropropene	10										
Methyl-2-pentanone	10										
Xylene	10										
1,3-Dichloropropene	10										
1,2-Trichloroethane	10										
1,1-Dichloroethane	10			6	J						

SEE NARRATIVE FOR CODE DEFINITIONS

Revised 09/99

QL = Contract Required Quantitation Limit

calculate sample quantitation limits: (CRQL * Dilution Factor) / (100 - %Moisture) / 100

DATA SUMMARY FORM: VOLATILES

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Job #: 31206

SDG : C31Y9

Number of Soil Samples : 9

WASHINGTON COMPRESSED STEEL

Number of Water Samples : 0

CEIMIC

Sample Number :		C31Y9		C31Z5		C31Z6		C31Z7		C31Z8	
Sampling Location :		WCS-010		WCS-02		WCS-03		WCS-04		WCS-05	
Lab QC:											
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :		11/21/2002		11/21/2002		11/21/2002		11/21/2002		11/21/2002	
Time Sampled :		12:12		10:33		10:55		11:08		11:22	
Moisture :		18		20		24		15		26	
Dilution Factor :		1.06		1.04		1.16		2.08		0.94	
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Acetone	10										
Bromochloromethane	10										
1,2-Dibromoethane	10										
Chlorobenzene	10										
Cybenzene	10										
Enes (total)	10										
Heptachlor	10										
Monochloroform	10										
Propylbenzene	10										
1,2,2-Tetrachloroethane	10										
1,2-Dichlorobenzene	10										
1,3-Dichlorobenzene	10										
1,4-Dichlorobenzene	10										
2,3-Dibromo-3-chloropropane	10		R		R		R		R		R
2,4-Trichlorobenzene	10										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Calculate sample quantitation limits: (CRQL * Dilution Factor) / (100 - %Moisture) / 100

Revised 09/99

DATA SUMMARY FORM: VOLATILES

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S #: 31206

SDG : C31Y9

Number of Soil Samples : 9

WASHINGTON COMPRESSED STEEL

Number of Water Samples : 0

CEIMIC

Sample Number :	C31Z9	C3200	C3201	C3202	
Sampling Location :	WCS-06	WCS-07	WCS-08	WCS-09	
Field QC:			Dupl. of C3202	Dupl. of C3201	
Matrix :	Soil	Soil	Soil	Soil	
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	
Date Sampled :	11/21/2002	11/21/2002	11/21/2002	11/21/2002	
Time Sampled :	11:35	11:53	12:05	12:34	
Moisture :	16	17	15	15	
Dilution Factor :	1.16	0.96	1.19	1.14	
Volatile Compound	CRQL	Result	Flag	Result	Flag
Chlorodifluoromethane	10				
Chloromethane	10				
Methyl Chloride	10				
Bromomethane	10				
Iodoethane	10				
Chlorofluoromethane	10				
1,1-Dichloroethane	10				
1,2-Trichloro-1,2,2-trifluoroethane	10				
Xylene	10	12	B	8	B
Carbon Disulfide	10				
Ethyl Acetate	10				
Ethylene Chloride	10	14	B	15	B
trans-1,2-Dichloroethene	10				
Ethyl tert-Butyl Ether	10				
1,1-Dichloroethane	10				
trans-1,2-Dichloroethene	10				
Butanone	10				
Chloroform	10				
1,1,1-Trichloroethane	10				
Cyclohexane	10				
Carbon Tetrachloride	10				
Benzene	10				
2,2-Dichloroethane	10				
Trichloroethene	10				
Methylcyclohexane	10				
2,2-Dichloropropane	10				
Bromodichloromethane	10				
trans-1,3-Dichloropropene	10				
Methyl-2-pentanone	10				
Toluene	10				
trans-1,3-Dichloropropene	10				
1,1,2-Trichloroethane	10				
Tetrachloroethene	10				

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

calculate sample quantitation limits: (CRQL * Dilution Factor) / (100 - %Moisture) / 100

Revised 09/99

DATA SUMMARY FORM: VOLATILES

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31206
 :
 :

SDG : C31Y9
 WASHINGTON COMPRESSED STEEL
 CEIMIC

Number of Soil Samples : 9
 Number of Water Samples : 0

Sample Number :	C3129	C3200	C3201	C3202							
Sampling Location :	WCS-06	WCS-07	WCS-08	WCS-09							
Field QC:			Dupl. of C3202	Dupl. of C3201							
Matrix :	Soil	Soil	Soil	Soil							
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg							
Date Sampled :	11/21/2002	11/21/2002	11/21/2002	11/21/2002							
Time Sampled :	11:35	11:53	12:05	12:34							
Moisture :	16	17	15	15							
Dilution Factor :	1.16	0.96	1.19	1.14							
Contaminant Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Acetone	10										
Bromochloromethane	10										
Dibromomethane	10										
Chlorobenzene	10										
Toluene	10										
Alkenes (total)	10										
Benzene	10										
Chloroform	10										
Propylbenzene	10										
1,2,2-Tetrachloroethane	10										
1-Dichlorobenzene	10										
1-Dichlorobenzene	10										
1-Dichlorobenzene	10										
1-Dibromo-3-chloropropane	10		R		R		R		R		
1,4-Trichlorobenzene	10										

L = Contract Required Quantitation Limit

Calculate sample quantitation limits: (CRQL * Dilution Factor) / (100 - %Moisture) / 100

SEE NARRATIVE FOR CODE DEFINITIONS

Revised 09/99

DATA SUMMARY FORM: BNA

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S #: 31206

SDG : C31Y9

Number of Soil Samples : 9

WASHINGTON COMPRESSED STEEL

Number of Water Samples : 0

CEIMIC

Sample Number :	C31Y9	C31Z5	C31Z6	C31Z7	C31Z8						
Sampling Location :	WCS-010	WCS-02	WCS-03	WCS-04	WCS-05						
Method QC:											
Matrix :	Soil	Soil	Soil	Soil (medium level)	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	11/21/2002	11/21/2002	11/21/2002	11/21/2002	11/21/2002						
Time Sampled :	12:12	10:33	10:55	11:08	11:22						
Moisture :	20	20	22	13	26						
Dilution Factor :	30.0	29.8	29.7	150	29.6						
Nonvolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Acetaldehyde	330									U	
Acetone	330									U	
1-(2-Chloroethyl) ether	330									U	
Chlorophenol	330									U	
Methylphenol	330									U	
1-oxybis(1-Chloropropane)	330									U	
Acetophenone	330									U	
Methylphenol	330									U	
Nitroso-di-n-propylamine	330									U	
1,2-Dichloroethane	330									U	
Toluene	330									U	
Phosphorane	330									U	
Nitrophenol	330									U	
1-Dimethylphenol	330									U	
1-(2-Chloroethoxy)methane	330									U	
1-Dichlorophenol	330									U	
Phthalene	330									U	
Chloroaniline	330									U	
1,2-Dichlorobutadiene	330									U	
Propylactam	330									U	
Chloro-3-methylphenol	330									U	
Methylnaphthalene	330									U	
1,2-Dichlorocyclopentadiene	330									U	
1,6-Trichlorophenol	330									U	
1,5-Trichlorophenol	330									U	
1'-Biphenyl	330									U	
Chloronaphthalene	330									U	
Nitroaniline	330									U	
Methylphthalate	330									U	
3-Dinitrotoluene	330									U	
Benaphthylene	330									U	
Nitroaniline	330									U	

QL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

calculate sample quantitation limits: (CRQL * Dilution Factor) / (100 - %Moisture) / 100

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DATA SUMMARY FORM: BNA

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ase #: 31206
ite :
ab. :

SDG : C31Y9
WASHINGTON COMPRESSED STEEL
CEIMIC

Number of Soil Samples : 9
Number of Water Samples : 0

Sample Number :		C31Y9	C31Z5		C31Z6		C31Z7	C31Z8			
Sampling Location :		WCS-010	WCS-02		WCS-03		WCS-04	WCS-05			
Field QC:											
Matrix :		Soil	Soil		Soil		Soil (medium level)		Soil		
Units :		ug/Kg	ug/Kg		ug/Kg		ug/Kg		ug/Kg		
Date Sampled :		11/21/2002	11/21/2002		11/21/2002		11/21/2002		11/21/2002		
Time Sampled :		12:12	10:33		10:55		11:08		11:22		
%Moisture :		20	20		22		13		26		
Dilution Factor :		30.0	29.8		29.7		150		29.6		
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Acenaphthene	330								UJ		
2,4-Dinitrophenol	830								UJ		
4-Nitrophenol	830								UJ		
Dibenzofuran	330								UJ		
2,4-Dinitrotoluene	330								UJ		
Diethylphthalate	330								UJ		
Fluorene	330								UJ		
4-Chlorophenyl-phenyl ether	330								UJ		
4-Nitroaniline	830								UJ		
4,6-Dinitro-2-methylphenol	830								UJ		
N-Nitrosodiphenylamine	330								UJ		
4-Bromophenyl-phenylether	330								UJ		
Hexachlorobenzene	330								UJ		
Atrazine	330								UJ		
Pentachlorophenol	830								UJ		
Phenanthrene	330	7400	J	13000		2600	J	21000	J	5700	J
Anthracene	330	1600	J	3200	J				UJ		
Carbazole	330			1700	J				UJ		
Di-n-butylphthalate	330	2200	J	1500	J				UJ		
Fluoranthene	330	11000	J	19000		4600	J	27000	J	9400	J
Pyrene	330	13000		17000		5100	J	25000	J	9000	J
Butylbenzylphthalate	330	1800	J	2100	J	14000		6800	J		
3,3'-Dichlorobenzidine	330								UJ		
Benzo(a)anthracene	330	6300	J	10000	J	3100	J	14000	J	5300	J
Chrysene	330	7000	J	11000	J	3400	J	15000	J	6100	J
bis(2-Ethylhexyl)phthalate	330	7900	B	5700	B	85000		8400	B	8100	B
Di-n-octylphthalate	330								UJ		
Benzo(b)fluoranthene	330	5800	J	7900	J	3900	J	15000	J	5800	J
Benzo(k)fluoranthene	330	6600	J	8400	J	3700	J	11000	J	5400	J
Benzo(a)pyrene	330	6100	J	8700	J	4000	J	12000	J	5900	J
Indeno(1,2,3-cd)pyrene	330	5000	J	6200	J	3800	J	12000	J	5100	J
Dibenzo(a,h)anthracene	330								UJ		
Benzo(g,h,i)perylene	330	3900	J	5800	J	3000	J	15000	J	4000	J

SEE NARRATIVE FOR CODE DEFINITIONS

Revised 09/99

CRQL = Contract Required Quantitation Limit

to calculate sample quantitation limits: (CRQL * Dilution Factor) / (100 - %Moisture) / 100

DATA SUMMARY FORM: BNA

Page 7 of 10e #: 31206
:
:SDG : C31Y9
WASHINGTON COMPRESSED STEEL
CEIMICNumber of Soil Samples : 9
Number of Water Samples : 0

Sample Number :		C31Z9	C3200		C3201		C3202				
Sampling Location :		WCS-06	WCS-07		WCS-08		WCS-09				
Lab ID QC:					Dupl. of C3202		Dupl. of C3201				
Matrix :		Soil	Soil		Soil		Soil				
Units :		ug/Kg	ug/Kg		ug/Kg		ug/Kg				
Date Sampled :		11/21/2002	11/21/2002		11/21/2002		11/21/2002				
Time Sampled :		11:35	11:53		12:05		12:34				
Moisture :		15	18		17		16				
Dilution Factor :		29.8	29.7		29.8		29.9				
volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
acetaldehyde	330										
acetone	330										
1,2-(2-Chloroethyl) ether	330										
Chlorophenol	330										
Methylphenol	330										
2'-oxybis(1-Chloropropane)	330										
Acetophenone	330										
Methylphenol	330										
Nitroso-di-n-propylamine	330										
1,2-dichloroethane	330										
Toluene	330										
Phenol	330										
Nitrophenol	330										
1,4-Dimethylphenol	330										
Di-(2-Chloroethoxy)methane	330										
1,2-Dichlorophenol	330										
Phthalene	330										
Chloroaniline	330										
1,2-dichlorobutadiene	330										
Gamma-butyrolactam	330										
Chloro-3-methylphenol	330										
Methylnaphthalene	330										
1,2-dichlorocyclopentadiene	330										
1,6-Trichlorophenol	330										
1,5-Trichlorophenol	330										
1'-Biphenyl	330										
Chloronaphthalene	330										
Nitroaniline	830										
Methylphthalate	330										
3-Dinitrotoluene	330										
Benaphthylene	330										
Nitroaniline	830										

QL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

calculate sample quantitation limits: (CRQL * Dilution Factor) / (100 - %Moisture) / 100

Revised 09/99

DATA SUMMARY FORM: BNA

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se #: 31206

SDG : C31Y9

Number of Soil Samples : 9

s :

WASHINGTON COMPRESSED STEEL

Number of Water Samples : 0

s :

CEIMIC

Sample Number :	C31Z9	C3200	C3201	C3202							
Sampling Location :	WCS-06	WCS-07	WCS-08	WCS-09							
Field QC:			Dupl. of C3202	Dupl. of C3201							
Matrix :	Soil	Soil	Soil	Soil							
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg							
Date Sampled :	11/21/2002	11/21/2002	11/21/2002	11/21/2002							
Time Sampled :	11:35	11:53	12:05	12:34							
Moisture :	15	18	17	16							
Dilution Factor :	29.8	29.7	29.8	29.9							
semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
acenaphthene	330										
1,4-Dinitrophenol	830										
1-Nitrophenol	830										
2-benzofuran	330										
1,4-Dinitrotoluene	330										
diethylphthalate	330										
fluorene	330										
1-Chlorophenyl-phenyl ether	330										
1-Nitroaniline	830										
2,6-Dinitro-2-methylphenol	830										
1-Nitrosodiphenylamine	330										
1-Bromophenyl-phenylether	330										
hexachlorobenzene	330										
triazine	330										
pentachlorophenol	830										
phenanthrene	330	4800	J	2300	J	8100	J	5000	J		
anthracene	330										
carbazole	330										
1,4-n-butylphthalate	330										
fluoranthene	330	7800	J	3700	J	9800	J	5900	J		
pyrene	330	7200	J	2900	J	8600	J	5200	J		
dibutylbenzylphthalate	330	3700	J								
1,3'-Dichlorobenzidine	330										
benzo(a)anthracene	330	4000	J	1500	J	4400	J	2500	J		
chrysene	330	4500	J	1700	J	5300	J	2900	J		
di(2-Ethylhexyl)phthalate	330	3800	B	2800	B	2100	B	1600	B		
1,4-n-octylphthalate	330										
benzo(b)fluoranthene	330			1900	J	4700	J	3000	J		
benzo(k)fluoranthene	330			1500	J	3900	J	2400	J		
benzo(a)pyrene	330	4100	J	1600	J	3900	J	2400	J		
indeno(1,2,3-cd)pyrene	330	2900	J	1300	J	3200	J	2000	J		
dibenzo(a,h)anthracene	330										
benzo(g,h,i)perylene	330	2000	J			2200	J	1600	J		

RQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

calculate sample quantitation limits: (CRQL * Dilution Factor) / (100 - %Moisture) / 100

Revised 09/99

DATA SUMMARY FORM: PESTICIDES AND PCBs

Page 9 of 10

e #: 31206

SDG : C31Y9

Number of Soil Samples : 9

WASHINGTON COMPRESSED STEEL

Number of Water Samples : 0

CEIMIC

Sample Number :	C31Y9	C31Z5	C31Z6	C31Z7	C31Z8						
Sampling Location :	WCS-010	WCS-02	WCS-03	WCS-04	WCS-05						
Lab QC:											
Matrix :	Soil	Soil	Soil	Soil	Soil						
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg						
Date Sampled :	11/21/2002	11/21/2002	11/21/2002	11/21/2002	11/21/2002						
Time Sampled :	12:12	10:33	10:55	11:08	11:22						
Moisture :	20	20	22	13	26						
Dilution Factor :	6.6	6.7	6.7	6.9	6.9						
Dilution Factor :	9.97 / 99.7	98.7 / 987	9.9 / 99	9.84 / 98.4	9.93 / 99.3						
Pesticide/PCB Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	1.7										
gamma-BHC	1.7	45						81	J	34	
delta-BHC	1.7	24	J			77	J				
gamma-BHC (Lindane)	1.7										
gamma-chloro	1.7					600 +	J				
drin	1.7	610 +		1100	J	1300 +	J	740 +	J	320	J
gamma-chloro epoxide	1.7	260	J	400	J	600 +	J	280	J		
dosulfan I	1.7										
drin	3.3										
4'-DDE	3.3	270	J	830	J	260	J	45	J	110	J
drin	3.3					60	J	47	J	49	
dosulfan II	3.3										
4'-DDD	3.3	240	J	49000 +		93				130	
dosulfan sulfate	3.3	51	J	2500							
4'-DDT	3.3	250	J	2700	J	100	J	180	J	580	J
ethoxychlor	17										
drin ketone	3.3										
drin aldehyde	3.3										
gamma-Chlordane	1.7	27	J			31	J	61	J		
gamma-Chlordane	1.7	520 +		1000		930 +		950 +	J	290	J
oxyphenyl	170										
roclor-1016	33										
roclor-1221	67										
roclor-1232	33										
roclor-1242	33										
roclor-1248	33	8400 +	J	17000	J	33000 +	J	17000 +	J	5500	J
roclor-1254	33	6000 +	J			11000 +	J	27000 +		7100 +	J
roclor-1260	33										

QL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

calculate sample quantitation limits: (CRQL * Dilution Factor) / (100 - %Moisture) / 100

Revised 09/99

results reported from diluted analysis

DATA SUMMARY FORM: PESTICIDES AND PCBs

Page 10 of 10

ase #: 31206

SDG : C31Y9

Number of Soil Samples : 9

ite :

WASHINGTON COMPRESSED STEEL

Number of Water Samples : 0

ib. :

CEIMIC

Sample Number :	C31Z9	C3200	C3201	C3202							
Sampling Location :	WCS-06	WCS-07	WCS-08	WCS-09							
Field QC:			Dupl. of C3202	Dupl. of C3201							
Matrix :	Soil	Soil	Soil	Soil							
Units :	ug/Kg	ug/Kg	ug/Kg	ug/Kg							
Date Sampled :	11/21/2002	11/21/2002	11/21/2002	11/21/2002							
Time Sampled :	11:35	11:53	12:05	12:34							
Moisture :	15	18	17	16							
H :	7.5	6.6	7.6	7.6							
Dilution Factor :	1.00 / 9.97	1.00 / 10.0	0.99 / 9.87	0.99 / 9.93							
Pesticide/PCB Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Alpha-BHC	1.7										
Beta-BHC	1.7	3.7	J								
Gamma-BHC	1.7										
Gamma-BHC (Lindane)	1.7										
Heptachlor	1.7	4.8	J			3.3	J	2.7	J		
Heptachlor epoxide	1.7	16	J	3.6	J	31	J	53 +	J		
Endosulfan I	1.7	14	J			10	J				
Endosulfan II	1.7										
Endosulfan sulfate	3.3			59	J						
1,4'-DDE	3.3	13	J	110 +		32	J	47	J		
1,4'-DDD	3.3	7.7	J			7.1	J	6.6	J		
Endosulfan II	3.3										
1,4'-DDD	3.3	13	J	4.0	J	12	J	13	J		
Endosulfan sulfate	3.3										
1,4'-DDT	3.3	48	J	130 +	J	120 +	J	110 +	J		
Methoxychlor	17										
Endrin ketone	3.3										
Endrin aldehyde	3.3										
Alpha-Chlordane	1.7			15							
Gamma-Chlordane	1.7	74 +	J			90 +	J	87 +	J		
Graphene	170										
roclor-1016	33										
roclor-1221	33										
roclor-1232	33										
roclor-1242	33										
roclor-1248	33	400				460	J	440	J		
roclor-1254	33	3200 +		600	J	2900 +	J	2400 +	J		
roclor-1260	33										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

calculate sample quantitation limits: (CRQL * Dilution Factor) / (100 - %Moisture) / 100

Revised 09/99

results reported from diluted analysis

Appendix C

Tentatively Identified Compounds

1F
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C31Y9

Lab Name: CEIMIC CORP

Contract: 68-W-99-065

Lab Code: CEIMIC

Case No.: 31206

SAS No.:

SDG No.: C31Y9

Matrix: (soil/water) SOIL

Lab Sample ID: 021307-02

Sample wt/vol: 4.7 (g/mL) G

Lab File ID: Q5016

Level: (low/med) LOW

Date Received: 11/22/02

% Moisture: not dec. 18

Date Analyzed: 12/02/02

GC Column: RTX-624 ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 556 67 2	CYCLOTETRASILOXANE, OCTAMETH	14.20	15	NJ
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
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1F
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C31Z5

Lab Name: CEIMIC CORP

Contract: 68-W-99-065

Lab Code: CEIMIC

Case No.: 31206

SAS No.:

SDG No.: C31Y9

Matrix: (soil/water) SOIL

Lab Sample ID: 021307-03

Sample wt/vol: 4.8 (g/mL) G

Lab File ID: Q5035

Level: (low/med) LOW

Date Received: 11/22/02

% Moisture: not dec. 20

Date Analyzed: 12/03/02

GC Column: RTX-624 ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 556-67-2	CYCLOTETRASILOXANE, OCTAMETH	14.20	32	NJ
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
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14.				
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1F
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C3126

Lab Name: CEIMIC CORP

Contract: 68-W-99-065

Lab Code: CEIMIC

Case No.: 31206

SAS No.:

SDG No.: C31Y9

Matrix: (soil/water) SOIL

Lab Sample ID: 021307-04

Sample wt/vol: 4.3 (g/mL) G

Lab File ID: Q5018

Level: (low/med) LOW

Date Received: 11/22/02

% Moisture: not dec. 24

Date Analyzed: 12/03/02

GC Column: RTX-624 ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN SILOXANE	14.20	36 J	
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
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1F
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C31Z7

Lab Name: CEIMIC CORP

Contract: 68-W-99-065

Lab Code: CEIMIC

Case No.: 31206

SAS No.:

SDG No.: C31Y9

Matrix: (soil/water) SOIL

Lab Sample ID: 021307-05

Sample wt/vol: 2.4 (g/mL) G

Lab File ID: Q5019

Level: (low/med) LOW

Date Received: 11/22/02

% Moisture: not dec. 15

Date Analyzed: 12/03/02

GC Column: RTX-624 ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN SILOXANE	14.20	32	J
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
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1F
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C31Z8

Lab Name: CEIMIC CORP

Contract: 68-W-99-065

Lab Code: CEIMIC

Case No.: 31206

SAS No.:

SDG No.: C31Y9

Matrix: (soil/water) SOIL

Lab Sample ID: 021307-06

Sample wt/vol: 5.3 (g/mL) G

Lab File ID: Q5020

Level: (low/med) LOW

Date Received: 11/22/02

% Moisture: not dec. 26

Date Analyzed: 12/03/02

GC Column: RTX-624 ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 556-67-2	CYCLOTETRASILOXANE, OCTAMETH	14.20	16	NJ
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
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14.				
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1F
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C3129

Lab Name: CEIMIC CORP

Contract: 68-W-99-065

Lab Code: CEIMIC Case No.: 31206

SAS No.:

SDG No.: C31Y9

Matrix: (soil/water) SOIL

Lab Sample ID: 021307-07

Sample wt/vol: 4.3 (g/mL) G

Lab File ID: Q5021

Level: (low/med) LOW

Date Received: 11/22/02

% Moisture: not dec. 16

Date Analyzed: 12/03/02

GC Column: RTX-624 ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN SILOXANE	14.20	20	J
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
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1F
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C3200

Lab Name: CEIMIC CORP

Contract: 68-W-99-065

Lab Code: CEIMIC

Case No.: 31206

SAS No.:

SDG No.: C31Y9

Matrix: (soil/water) SOIL

Lab Sample ID: 021307-08

Sample wt/vol: 5.2 (g/mL) G

Lab File ID: Q5022

Level: (low/med) LOW

Date Received: 11/22/02

% Moisture: not dec. 17

Date Analyzed: 12/03/02

GC Column: RTX-624 ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 556-67-2	CYCLOTETRASILOXANE, OCTAMETH	14.20	19	NJ
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
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21.				
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23.				
24.				
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26.				
27.				
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29.				
30.				

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1F
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C3201

Lab Name: CEIMIC CORP

Contract: 68-W-99-065

Lab Code: CEIMIC

Case No.: 31206

SAS No.:

SDG No.: C31Y9

Matrix: (soil/water) SOIL

Lab Sample ID: 021307-09

Sample wt/vol: 4.2 (g/mL) G

Lab File ID: Q5023

Level: (low/med) LOW

Date Received: 11/22/02

% Moisture: not dec. 15

Date Analyzed: 12/03/02

GC Column: RTX-624 ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 556-67-2	CYCLOTETRASILOXANE, OCTAMETH	14.20	24	NJ
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

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1F
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C3202

Lab Name: CEIMIC CORP

Contract: 68-W-99-065

Lab Code: CEIMIC

Case No.: 31206

SAS No.:

SDG No.: C31Y9

Matrix: (soil/water) SOIL

Lab Sample ID: 021307-10

Sample wt/vol: 4.4 (g/mL) G

Lab File ID: Q5024

Level: (low/med) LOW

Date Received: 11/22/02

% Moisture: not dec. 15

Date Analyzed: 12/03/02

GC Column: RTX-624 ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN SILOXANE	14.20	19	J
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1G
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C31Y9

Lab Name: CEIMIC CORP

Contract: 68-W-99-065

Lab Code: CEIMIC

Case No.: 31206

SAS No.:

SDG No.: C31Y9

Matrix: (soil/water) SOIL

Lab Sample ID: 021307-02

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: DF016

Level: (low/med) LOW

Date Received: 11/22/02

% Moisture: 20 Decanted: (Y/N) N

Date Extracted: 12/01/02

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 12/10/02

Injection Volume: 2.0 (uL)

Dilution Factor: 30.0

GPC Cleanup: (Y/N) Y pH: 6.6

Extraction: (Type) SONC

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 70362-46-8	1,1'-BIPHENYL, 2,2',3,5-TETR	10.74	5900	NJ
2.	UNKNOWN PCB	10.94	4300	J
3. 60233-24-1	1,1'-BIPHENYL, 2,3',4,6-TETR	11.04	3500	NJ
4. 32598-10-0	1,1'-BIPHENYL, 2,3',4,4'-TET	11.29	5600	NJ
5.	UNKNOWN PCB	11.45	2700	J
6.	UNKNOWN	14.06	3200	J
7. 192-97-2	BENZO [E] PYRENE	14.55	10000	NJ
8.	UNKNOWN	14.87	6000	J
9.	UNKNOWN	14.99	4700	J
10.	UNKNOWN	17.00	3300	J
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
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26.				
27.				
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29.				
30.				

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1G
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C3125

Lab Name: CEIMIC CORP

Contract: 68-W-99-065

Lab Code: CEIMIC

Case No.: 31206

SAS No.:

SDG No.: C31Y9

Matrix: (soil/water) SOIL

Lab Sample ID: 021307-03

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: DF019

Level: (low/med) LOW

Date Received: 11/22/02

% Moisture: 20 Decanted: (Y/N) N

Date Extracted: 12/01/02

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 12/10/02

Injection Volume: 2.0 (uL)

Dilution Factor: 30.0

GPC Cleanup: (Y/N) Y pH: 6.7

Extraction: (Type) SONC

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/Kg

Number TICs found: 11

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 41464-40-8	1,1'-BIPHENYL, 2,2',4,5'-TET	10.93	4400	NJ
2. 55215-17-3	1,1'-BIPHENYL, 2,2',3,4,6-PE	11.29	2800	NJ
3. 72-54-8	1,1-DICHLORO-2,2-BIS(P-CHLOR	11.98	22000	NJ
4.	UNKNOWN	12.36	4000	J
5. 192-97-2	BENZO [E] PYRENE	14.53	4900	NJ
6.	UNKNOWN	15.39	6500	J
7.	UNKNOWN	15.63	10000	J
8.	UNKNOWN	16.22	6100	J
9.	UNKNOWN	16.99	4300	J
10.	UNKNOWN	18.19	5000	J
11.	UNKNOWN	20.19	9700	J
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11/3/02

1G
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C31Z6

Lab Name: CEIMIC CORP

Contract: 68-W-99-065

Lab Code: CEIMIC

Case No.: 31206

SAS No.:

SDG No.: C31Y9

Matrix: (soil/water) SOIL

Lab Sample ID: 021307-04

Sample wt/vol: 30.3 (g/mL) G

Lab File ID: DF020

Level: (low/med) LOW

Date Received: 11/22/02

% Moisture: 22 Decanted: (Y/N) N

Date Extracted: 12/01/02

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 12/10/02

Injection Volume: 2.0 (uL)

Dilution Factor: 30.0

GPC Cleanup: (Y/N) Y pH: 6.7

Extraction: (Type) SONC

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 16606-02-3	1,1'-BIPHENYL, 2,4',5-TRICHL	10.45	5400	NJ
2.	UNKNOWN PCB	11.29	2600	J
3.	UNKNOWN	14.52	7100	J
4.	UNKNOWN	15.65	11000	J
5.	UNKNOWN	16.25	14000	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C3128

Lab Name: CEIMIC CORP

Contract: 68-W-99-065

Lab Code: CEIMIC

Case No.: 31206

SAS No.:

SDG No.: C31Y9

Matrix: (soil/water) SOIL

Lab Sample ID: 021307-06

Sample wt/vol: 30.4 (g/mL) G

Lab File ID: DF021

Level: (low/med) LOW

Date Received: 11/22/02

% Moisture: 26 Decanted: (Y/N) N

Date Extracted: 12/01/02

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 12/10/02

Injection Volume: 2.0 (uL)

Dilution Factor: 30.0

GPC Cleanup: (Y/N) Y pH: 6.9

Extraction: (Type) SONC

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	10.74	3800	J
2.	UNKNOWN PAH	13.25	3300	J
3.	UNKNOWN	13.39	16000	J
4. 198-55-0	PERYLENE	14.53	3400	NJ
5.	UNKNOWN	15.63	6800	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C31Z9

Lab Name: CEIMIC CORP

Contract: 68-W-99-065

Lab Code: CEIMIC

Case No.: 31206

SAS No.:

SDG No.: C31Y9

Matrix: (soil/water) SOIL

Lab Sample ID: 021307-07

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: DF022

Level: (low/med) LOW

Date Received: 11/22/02

% Moisture: 15 Decanted: (Y/N) N

Date Extracted: 12/01/02

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 12/10/02

Injection Volume: 2.0 (uL)

Dilution Factor: 30.0

GPC Cleanup: (Y/N) Y pH: 7.5

Extraction: (Type) SONC

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 50-32-8 <i>UNKNOWN</i>	BENZO [A] PYRENE	14.14	11000	NJ
2. 192-97-2	BENZO [E] PYRENE	14.54	3300	NJ
3. <i>UNKNOWN</i>	UNKNOWN	15.89	2400	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C3201

Lab Name: CEIMIC CORP

Contract: 68-W-99-065

Lab Code: CEIMIC

Case No.: 31206

SAS No.:

SDG No.: C31Y9

Matrix: (soil/water) SOIL

Lab Sample ID: 021307-09

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: DF024

Level: (low/med) LOW

Date Received: 11/22/02

% Moisture: 17 Decanted: (Y/N) N

Date Extracted: 12/01/02

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 12/10/02

Injection Volume: 2.0 (uL)

Dilution Factor: 30.0

GPC Cleanup: (Y/N) Y pH: 7.6

Extraction: (Type) SONC

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 540-97-6	CYCLOHEXASILOXANE, DODECAMET	6.42	3300	NJ
2.	UNKNOWN SILOXANE	8.01	3200	J
3.	UNKNOWN SILOXANE	10.67	2400	J
4. 207-08-9 UNKNOWN	BENZO [K] FLUORANTHENE	14.54	3200	NJ
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Appendix D

Chain of Custody Records



USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: 31206

DAS No:

R

Region: 3	Date Shipped: 11/21/2002	Chain of Custody Record	Sampler: (b) (4)
Project Code:	Carrier Name: FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	Airbill: 838267719557	1 (b) (4) 11/21/02 1544	
CERCLIS ID:	Shipped to: Celmic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900	2	
Spill ID:		3	
Site Name/State: Washington Compressed Steel/PA		4	
Project Leader: (b) (4)			
Action: Removal Action			
Sampling Co: Tetra Tech Em Inc			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C31Y8	Soil (0"-12")/ (b) (4)	L/G	Semi soils (14), VOA encore (14)	785 (Ice Only), 786 (Ice Only), 787 (Ice Only), 788 (Ice Only), 789 (Ice Only), 790 (Ice Only), 791 (Ice Only), 879 (Ice Only) (8)	WCS-01	S: 11/21/2002 10:15	MC31Y8	-
C31Y9	Soil (0"-12")/ (b) (4)	L/G	Semi soils (14), VOA encore (14)	795 (Ice Only), 796 (Ice Only), 797 (Ice Only), 798 (Ice Only), 800 (Ice Only) (5)	WCS-010	S: 11/21/2002 12:22	MC31Y9	-
C31Z5	Soil (0"-12")/ (b) (4)	L/G	Semi soils (14), VOA encore (14)	831 (Ice Only), 833 (Ice Only), 834 (Ice Only), 835 (Ice Only), 836 (Ice Only) (5)	WCS-02	S: 11/21/2002 10:33	MC31Z5	-
C31Z6	Soil (0"-12")/ (b) (4)	L/G	Semi soils (14), VOA encore (14)	837 (Ice Only), 839 (Ice Only), 840 (Ice Only), 841 (Ice Only), 842 (Ice Only) (5)	WCS-03	S: 11/21/2002 10:55	MC31Z6	-
C31Z7	Soil (0"-12")/ (b) (4)	L/G	Semi soils (14), VOA encore (14)	843 (Ice Only), 845 (Ice Only), 846 (Ice Only), 847 (Ice Only), 848 (Ice Only) (5)	WCS-04	S: 11/21/2002 11:08	MC31Z7	-
C31Z8	Soil (0"-12")/ (b) (4)	L/G	Semi soils (14), VOA encore (14)	849 (Ice Only), 851 (Ice Only), 852 (Ice Only), 853 (Ice Only), 854 (Ice Only) (5)	WCS-05	S: 11/21/2002 11:22	MC31Z8	-
C31Z9	Soil (0"-12")/ (b) (4)	L/G	Semi soils (14), VOA encore (14)	855 (Ice Only), 857 (Ice Only), 858 (Ice Only), 859 (Ice Only), 860 (Ice Only) (5)	WCS-06	S: 11/21/2002 11:35	MC31Z9	-
C3200	Soil (0"-12")/ (b) (4)	L/G	Semi soils (14), VOA encore (14)	861 (Ice Only), 863 (Ice Only), 864 (Ice Only), 865 (Ice Only), 866 (Ice Only) (5)	WCS-07	S: 11/21/2002 11:53	MC3200	-
C3201	Soil (0"-12")/ (b) (4)	L/G	Semi soils (14), VOA encore (14)	867 (Ice Only), 869 (Ice Only), 870 (Ice Only), 871 (Ice Only), 872 (Ice Only) (5)	WCS-08	S: 11/21/2002 12:05	MC3201	-



Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: C31Y8	Additional Sampler Signature(s): (b) (4)	Chain of Custody Seal Number:
Analysis Key: Semi soils = CLP Semivolatiles and Pesticides/PCBs, VOA encore = CLP TCL Volatiles (encore)	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 3-373675543-112102-0003

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office 2000 Edmund Hallway Dr. Reston VA 20191-3400 Phone 703/264-9348 Fax 703/264-9222

REGION COPY

Region: 3	Date Shipped: 11/21/2002	Chain of Custody Record	Sampler Signature: (b) (4)
Project Code:	Carrier Name: FedEx	Relinquished By (Date / Time)	Received By (Date / Time)
Account Code:	Airbill: 838267719557	(b) (4) 11/21/02 1544	
CERCLIS ID:	Shipped to: Celmic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900	2	
Spill ID:		3	
Site Name/State: Washington Compressed Steel/PA		4	
Project Leader: (b) (4)			
Action: Removal Action			
Sampling Co: Tetra Tech Em Inc			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C3202	Soil (0"-12")/ Stephen Grieco	L/G	Semi soils (14), VOA encore (14)	873 (Ice Only), 875 (Ice Only), 878 (Ice Only), 877 (Ice Only), 878 (Ice Only) (5)	WCS-09	S: 11/21/2002 12:34	MC3202	Dup of C3201



Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: C31Y8	Additional Sampler Signature(s): (b) (4)	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____
Semi soils = CLP Semivolatiles and Pesticides/PCBs, VOA encore = CLP TCL Volatiles (encore)			

TR Number: 3-373675543-112102-0003

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

REGION COPY

F2V61.043 Page 2 of 2

U.S. EPA Region III Sample Scheduling Request Form

975

ASE No: CT1574 31206		DAS No:		NSF No:	
November 11,		Data Validation Level: M2, I M2		EPA Lab Reply:	
Name: Washington Compressed Steel				Cost:	
Address: 1900 N. American Street			City: Philadelphia		State: PA
Latitude:		Longitude:		Anal +Val Data TAT:35 days	
Type: Superfund		CERCLIS No: NONE		Activity: RS Removal Evaluation	
Site No: 03T03N50102DA3T5LS00		Operable Unit:		Spill ID:	
Owner: (b) (4)		RPM/PO: Greg Ham (3HS31)		Site Leader: (b) (4)	
		Phone: 215-814-3194		Phone: (b) (4) 2	
(b) (4)		FAX: 215-814-3254		FAX: (b) (4)	
(b) (4)		E-mail: ham.greg@epa.gov		E-mail: j(b) (4)	
Contract No: (b) (4)		Contract Type: START 3 Eastern Area		Prime: Tetra Tech EM Inc. Sub:	
Assignment Date:		Analytical TAT: 14 days		Ship Date From: November 21, 2002	
Lab: CEIMIC				Ship Date To: November 22, 2002	
Lab: 14 days LIBRTV				Carrier:	
MPLES	METHOD	PARAMETER		MATRIX	
	ILM04.1	TAL Metals & Cyanide		Soil	
	OLM04.2	TCL Organics		Soil	
				OSC needs verbal result faxed to him at above number when recieved at RSCC.	

Data validation levels M3 & IM2 require justification. QC field samples must be included as part of total number of samples.

Instructions: OSC needs verbal result faxed to him at above number when recieved at RSCC. Please arrange for a Saturday if the samplers cannot get the samples out on Thursday. Thursday is the only day they have access to the facility.
 Project Plan ID / Permit ID: Site characterization.
 Project / Permit Reporting Limits As per method (QC Requirements)

Appendix E

Laboratory Case Narratives

SDG Narrative

The enclosed data package is in response to USEPA, Region III, Case No. 31206, SDG No. C31Y9, Contract No. 68-W-99-065. Under this SDG there are 11 VOA analyses, 11 SVOA analyses, and 11 Pest/PCB analyses for 9 soil samples received at Ceimic Corporation on November 22, 2002. The analyses for sample C31Y8 were cancelled.

EPA ID:	CEIMIC ID:	Analysis
C31Y9	021307-02	VOA, SVOA, Pest/PCB
C31Y9MS	021307-02MS	VOA, SVOA, Pest/PCB
C31Y9MSD	021307-02MSD	VOA, SVOA, Pest/PCB
C31Z5	021307-03	VOA, SVOA, Pest/PCB
C31Z6	021307-04	VOA, SVOA, Pest/PCB
C31Z7	021307-05	VOA, SVOA, Pest/PCB
C31Z8	021307-06	VOA, SVOA, Pest/PCB
C31Z9	021307-07	VOA, SVOA, Pest/PCB
C3200	021307-08	VOA, SVOA, Pest/PCB
C3201	021307-09	VOA, SVOA, Pest/PCB
C3202	021307-10	VOA, SVOA, Pest/PCB

Sample Receipt

Cooler Temperatures upon receipt were 5°C.

No tag numbers were written on sample tags for C3202 (tag 878) and C31Y9 (tag 798). The BNA/PEST fraction for C31Y8 arrived broken. Dyncorp was notified and instructed Ceimic to cancel the sample.

(2) Instrumentation and Column Identification

The following instruments were used for the analyses:

GC/MS Analysis

A. VOA

MS17 HP5973 GC/MS, 30m, 0.25mm ID, 1.4 um, RTX-624 capillary column.
OI trap #10 (8cm Tenax, 8cm silica gel, 8cm carbon molecular sieve)

B. SVOA

MS4 HP5970B GC/MS, 30 m, 25 mm ID, ZB-5 fused silica capillary column

MS11 HP5973 GC/MS, 30 m, 25 mm ID, ZB-5 fused silica capillary column

C. PEST/PCB

AD6: HP5890II using 30m x 0.53mm ID, DB5 megabore column (GC8)

AD7: HP5890II using 30m x 0.53mm ID, DB35 megabore column (GC8)

(3) Sample Information

An "x" qualifier is flagged by Target Thru-put software whenever the data is manually edited. The letters "M" for GC/MS and "FF" for GC are used on the raw data of the quantitation report whenever a manual integration is performed. Manual integrations are performed on GC/MS and GC standards and samples when computer generated integration picks up only a portion of the chromatographic peak, due to software limitations. When manual integrations are required, these integrations are performed using sound defensible professional judgment, in order to report accurate data. Each manual integration is signed and dated, and reviewed by both the lab supervisor and the GC/MS Interpretation Specialist for GC/MS or the Organic Lab Manager for Pest/PCB.

A. VOA Fraction (Method CLP SOW OLM04.2)

The following samples were received as Encore samples and analyzed according to OLM04.2, Method 5035:

EPA ID:	Ceimic ID:
C31Y9	021307-02
C31Y9	021307-02
C31Y9MS	021307-02MS
C31Y9MSD	021307-02MSD
C31Z5	021307-03
C31Z6	021307-04
C31Z7	021307-05
C31Z8	021307-06
C31Z9	021307-07
C3200	021307-08
C3201	021307-09
C3202	021307-10

The following samples were analyzed out of hold time, but within technical hold time:

EPA ID:	Ceimic ID:
C31Y9MS	021307-02MS
C31Y9MSD	021307-02MSD
C31Z5	021307-03

11/21 → 11/3

12/21/02

Sample C31Y9MS (021307-02MS) had low spike recoveries for Trichloroethene and Chlorobenzene.

B. SVOA Fraction (Method CLP SOW OLM04.2)

The quantitation ion for bis-(2-chloroethyl)ether was changed to the secondary ion 63, rather than the primary ion 93, because there is interference with the ion 93 from aniline, which is present in the standard mix.

The following samples were analyzed at a dilution as a result of GC/FID screening and the dark color and viscosity of the extract:

EPA ID:	CEIMIC ID:	DILUTION:
C31Y9	021307-02	1:30
C31Y9MS	021307-02MS	1:30
C31Y9MSD	021307-02MSD	1:30
C31Z5	021307-03	1:30
C31Z6	021307-04	1:30
C31Z8	021307-06	1:30
C31Z9	021307-07	1:30
C3200	021307-08	1:30
C3201	021307-09	1:30
C3202	021307-10	1:30

Sample C31Z7 (021307-05) and the associated MS/MSD samples were re-extracted as medium soils, out of hold time, and were analyzed at a dilution of 1:5.

Samples C31Y9MS (021307-02MS) and C31Y9MSD (021307-02MSD) were extracted out of hold time.

Sample C31Y9MS (021307-02MS) had a 0% recovery for 2,4-Dinitrotoluene and a negative recovery for Pyrene.

Sample C31Y9MSD (021307-02MSD) had 0% recoveries for Pdntachlorophenol and Pyrene.

C. PEST/PCB Fraction (Method CLP SOW OLM04.2)

The matrix spike / MS duplicate portions of sample C31Y9 [021307-02] were extracted one day outside of contract-required holding time (12/02/02).

All of the samples in this SDG contain one or more target analytes at concentrations exceeding the linear range of the initial calibration. The extracts were diluted according to the following table and reanalyzed:

Sample	Lab ID	Dilution Factor	Sample	Lab ID	Dilution Factor
C31Y9	021307-02	100	C31Z9	021307-07	10
C31Z5	021307-03	1000	C3200	021307-08	10
C31Z6	021307-04	100	C3201	021307-09	10
C31Z7	021307-05	100	C3202	021307-10	10
C31Z8	021307-06	100			

Aroclor-1248 and Aroclor-1254 are identified in all of the samples listed above, with the exception of samples C31Z5 (containing only Aroclor-1248) and C3200 (containing only Aroclor-1254).

The following matrix spike compound recoveries and relative recovery differences are outside of QC limits in the analysis of sample C31Y9 due to interferences with the Aroclor responses, as well as the required dilution by a factor of 10:

Compound	MS recovery	MSD recovery	Relative difference
Heptachlor	762%	Undetected	200%
Aldrin	1286%	810%	45%
Dieldrin	Undetected	Undetected	Undefined
Endrin	193%	76%*	87%
4,4'-DDT	476%	71%*	148%

* denotes a compound recovery within QC limits.

Deviations from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his/her designee, as verified by the following signature.

(b) (4)

[Redacted Signature]

12/11/02
Date

ALKANE NARRATIVE REPORT
Report date : 12/18/2002
SDG: C31Y9

Client Sample ID: C31Z5	Lab Sample ID: 021307-03	File ID: DF019
Compound	RT	Est. Conc. Q
Unknown Branched Alkane	12.47	7300 J

VALIDATOR'S COPY



Tetra Tech EM Inc.

709 Chelsea Parkway ♦ Boothwyn, PA 19061 ♦ (610) 485-6410 ♦ FAX (610) 485-8587

December 20, 2002

**MEMO TO FILE
CASE 31206**

Washington Compressed Steel

RSCC
U.S. EPA Region III OAS/QA
Environmental Science Center
701 Mapes Road
Ft. Meade, MD 20755

Dear Ms. Jeffery:

This memo is written to correct the sampling time on the Inorganic Traffic Report Chain of Custody Record numbers 3-373675543-112102-0001 for sample MC31Y9. The correct sampling time is 12:12. This memo is further written to correct the sampling time on the Organic Traffic Report Chain of Custody Record numbers 3-373675543-112102-0003 for sample C31Y9. The correct sampling time is 12:12. The tag number 798 was omitted from the tag for the moisture jar for sample C31Y9. Tag number 878 was omitted from the tag for the moisture jar sample C3202.

Please note these changes.

Sincerely,

(b) (4)

(b) (4)

For Sampler (b) (4)

cc: EPA OSC Greg Ham (3HS31)
START 3 TDD Files